



First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER

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EDITORIAL COMMENT

A PROPOS our article on the issue of parachutes for the use of pilots and observers of the R.A.F., we are exceedingly glad to know that our surmise was correct and that no charge lies against the Treasury. What has happened is simply that the issue of these very necessary life-saving devices has been held up, pending the results of tests which are to be made shortly. The first of these tests is, we understand, to take place at Orfordness on the 17th inst.

Those Parachutes

It would be interesting to know who started the canard, and why? We believe, too, the Air Ministry is even more interested, and would like very much to know who gave the alleged news to the *Daily Mail*, which was the paper in which the statement first appeared, though, it is fair to say, our contemporary expressed itself unable to believe that even the Treasury

could carry parsimony to such lengths as to deny the issue of parachutes after their value has been so amply demonstrated in the war and in practice flying. The *Evening Standard* seems to think it was all a seasonable practical joke at the *Mail's* expense—the statement was timed to appear on April 1, but actually got into the paper on the day before—but we do not think the explanation is a tenable one. However, it was an exceedingly mischievous statement, and if its author can be traced he will doubtless be dealt with in the way he deserves, if he should be a member of the R.A.F. or connected in any way with the Air Ministry.

Civil Aviation and the Future of the R.A.F.

Recently we drew attention to the categorical reports that were current regarding the intentions of the Government in the matter of the future of the R.A.F. As we said at the time, it was reported on all hands that the policy of the present Government was to abolish the R.A.F. as a separate service and revert to the pre-war organisation, under which the Navy and Army were in complete control of their respective branches of the Air Service. The denials issued by subordinate officials of the Air Ministry were not, in our judgment, sufficient to allay the apprehension to which these reports gave rise. Consequently, the R.A.F. was in a fair way to suffer as a result of the uncertainty surrounding its future. In fact, we know that it did suffer, and it was because of that knowledge we appealed for a clear statement of the Government policy from the Minister most closely concerned—Mr. Churchill. We are glad to see that this statement has now been made and the misunderstanding wiped out. Answering Mr. Joynson Hicks, the War Secretary said: "There is no intention of bringing the Royal Air Force under the control of the War Office, or of placing civil aviation under the control of the Ministry of Ways and Communications. Cabinet decisions in this sense have been definitely obtained."

We are unfeignedly thankful to know that this is so. As our readers know, it was *FLIGHT* which first began the real agitation for "One Service, One Uniform, One Badge," and it was out of sincere conviction that only as a separate entity could the Air Service really make good that we kept at the task of advocating the change at a time when almost every

other organ of opinion was actively antagonistic to the idea or else kept silence. Over a year ago the recommendation was adopted by the then Government, and the Royal Air Force emerged from the welter of muddle in which it had been engulfed under the system of dual control which had obtained up till then. The record of the Force since then is surely a sufficient answer to those who opposed the change, and it is simply unthinkable that the organisation which, during the closing months of the war, accomplished so much and made so great a contribution to the Allied victory, should be sacrificed now to appease a few reactionary admirals and generals. It is not to be—and for this relief much thanks!

Again, there is the question of the future of civil aviation, which popular rumour had assigned to the control of the Geddes administration. How the Cabinet has managed to escape the mesmeric influence of "Eric, or Little by Little" we do not know, but it is more than satisfactory to know that the development of a new transport, from which so much is to be hoped, is not to be trammelled by the control of a bureaucratic Ministry which knows nothing about it. The intention, apparently, is that civil aviation shall be left to the control of the Air Ministry, which is at least composed of men who know something about aviation and its future possibilities. Mr. Churchill made this categorical statement in the House on the 4th inst. :—

"The Controller-General of Civil Aviation is the member of the Air Council responsible for the executive work falling to the Air Ministry under the Air Navigation Acts, 1911-19, and for carrying out the accepted policy of assisting the development of civil aviation. It is proposed that he shall be assisted by four heads of departments, who will take charge of planning, information, communications, and aerodromes respectively. Provision will also be made for meteorological services. Terms for the heads of departments have been approved, appointment of staff is proceeding, and the department is being formally constituted as from to-day, being the beginning of the financial year."

That should effectively dispose of the Ministry of Ways and Communications *canard*.

Air Raid Insurance Results

Readers of FLIGHT may remember that when the danger to be apprehended from enemy aircraft was first realised shortly after the outbreak of the war, we expressed the strong conviction that damage caused during air raids ought to be made a State liability—that the State should indemnify the private citizen against all loss or damage caused by enemy action. Alternatively, we suggested that if the Government could not see its way to accept such a liability, then it should turn enemy action to account and make a national asset out of it by instituting a State scheme of insurance against damage by hostile aircraft. This was in September, 1914. It is a matter of ancient history now that the Government in July, 1915, adopted the last of these suggestions and did inaugurate an insurance scheme, covering shipping losses, damage by aircraft and by bombardment. The figures relating to this vast enterprise have recently been published as a White Paper, and show that the scheme produced £197,797,800 in premiums, while the total losses amounted to £171,462,800, leaving a credit balance of £26,335,000.

The White Paper discloses that payments due to our Allies will reduce this balance to about £17,000,000. No less than £10,640,000 of this latter sum is represented by profits on insurance of property against aircraft and bombardment risks. The premiums paid under these heads amount to £13,610,000, while the claims paid total only £2,970,000. This enormous profit has been made in face of the fact that since February, 1917, a discount of 50 per cent. on the original premium rates has been allowed. As the original suggestion of the scheme came from FLIGHT, perhaps we may be allowed to congratulate the Government on the success obtained, which must have surprised even the Government actuaries.

A New Air Competition

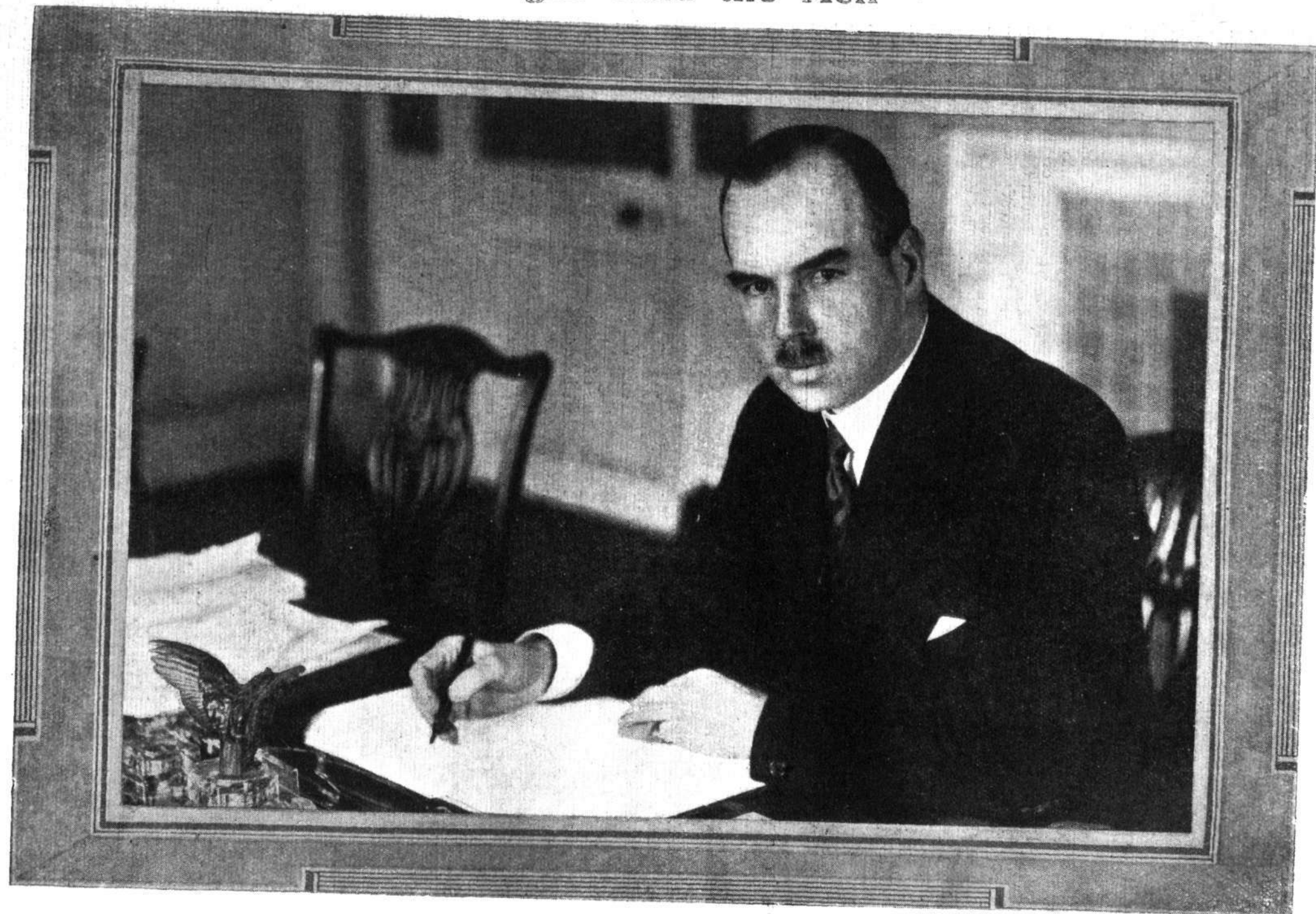
The *Echo de Paris* announces, according to Reuter, that it is instituting a competition for commercial and tourist aviation, for which prizes to the value of £12,500 are being offered, and already one British entry has been sent in.

There will be a preliminary test, which will consist of a flight of about 2,490 miles, to be completed in stages. The route will lie through the largest towns in France, and competing aviators will have to touch at every country contiguous to France with the exception of Germany.

Pilots passing this test will then be subjected to a detailed examination, and will be judged by a jury who will give different marks for security, comfort, and speed. The maximum speed, lifting power, and cost of transport per ton per mile will also be considered from a practical and commercial point of view.

This is the sort of competition which is really wanted, and we congratulate our French contemporary on its enterprise and foresight. We need not elaborate the point, upon which we have so frequently insisted, that there is still a long road to be travelled before commercial aviation shall have established itself in the confidence of the public. That is so much of a truism that it becomes almost wearisome by constant repetition. Any form of test or competition, therefore, which is calculated to inspire confidence in the security and dependability of aircraft is to be welcomed, especially at this comparatively early stage in commercial development, and we trust that the one under notice will prove to be only the forerunner of many.

The aeroplane, for all its success in the war, is now, so far as the general public is concerned, in a position similar to that of the motor-car in the early days of the present century. The car had then become more or less of a practical proposition, but it had not gone beyond the hands of the expert and the enthusiast—the public knew little of its capabilities and had even less faith in them. But then came the time of the long-distance trials carried out by the A.C.G.B. and I.—now the R.A.C.—and other pioneer bodies. From these trials, carried out as they were under absolute touring conditions, but also under the strictest supervision, an enormous mass of data valuable to the designer and constructor was obtained, which all tended to make the car the vehicle we know to-day. Quite as valuable in its effect was the ocular demonstration these trials afforded to the public of the fact that the car was not a toy, but a really practical vehicle, designed and built for practical work on the highways. Year after year these



Mr. H. WHITE-SMITH, C.B.E., Chairman of the Society of British Aircraft Constructors and Director of the British and Colonial Aeroplane Company, Limited.

"Flight" Copyright.

trials were held, each one more successful than the last, until the time came when the car was accepted as a concrete proposition and motoring and the car became a cult.

As we have said, the aeroplane is in the same position now, and nothing will assist more materially to bring it to that stage of commercial perfection which is essential, or to imbue the public with the necessary confidence in its stability, than trials and competitions such as that proposed by the *Echo de Paris*. We trust that as soon as the intentions of the Government with regard to private flying are made known, some public-spirited person or body will come along with a similar proposal here.

Standardisation of Aircraft Materials

During a period of nearly two years, the British Engineering Standards Association has been responsible for the preparation of all specifications for aircraft materials on behalf of the D.A.P. Some seventy standard specifications were actually issued, and a further sixty were practically complete at the cessation of hostilities. It is perfectly clear that this work must go on, and we are, therefore, pleased to know that the Air Ministry has requested the Association to continue the preparation of specifications for aircraft materials and parts, as well as to undertake their distribution, together with the issue of manufacturing notes and instructions on testing procedure which were formerly prepared and issued by the Technical and Inspection Departments of the D.A.P. It is further satisfactory to know that, with the approval of the Main Standards Committee, the Association has consented to carry out this work.

It is now proposed to reorganise on a peace basis the various sub-committees concerned with the preparation of these specifications. These sub-committees when reorganised will undertake the revision of the specifications for peace purposes, and in the meantime the whole of the specifications in use by the D.A.P. have, for immediate purposes, been adopted as interim British standards.

There is no doubt of the value of this institution. The preparation of specifications by the British Engineering Standards Associations in the manner to be adopted, whereby manufacturers and users, as well as technical officers of the Government Departments and experts from research laboratories and colleges, will co-operate in their production, cannot fail to be of inestimable use and value to all concerned with aircraft production. Moreover, it must have a marked influence in other directions. The general public will, as a matter of course, have the more

confidence in the structural security of aircraft when it is realised that every bit of material employed has to pass a certain standard, while the problems connected with insurance cannot fail to be greatly simplified by the use of these standard specifications, which ensure a uniform standard of construction providing, of course, design is right.

The Social Side of Flying

It is pleasing to note that considerable activity is being manifested on what may be termed the social side of the flying movement. All over the country there is talk of the formation of flying clubs, several of which are of quite an ambitious nature. At Hendon, where one of the largest of these clubs is to be inaugurated in the near future, a good deal of progress has already been made with the buildings which are to form the headquarters of the London Flying Club. The main object of the club is to provide a social institution, on country club lines, essentially linked with flight. Arrangements have been made, or are in process of negotiation, with other flying clubs for an interchange of facilities between their respective members. For instance, such arrangements have been made with the Sussex County Air Club, which is taking over the old aerodrome at Shoreham, so that members of the London club will be able to fly down to Shoreham, spend the day there and fly back to town, the single journey occupying only about half an hour.

We look to see a great deal of good to the whole movement come out of the institution of these clubs. Again going back to the analogy of the car, it was the early clubs associated with motoring, formed primarily for social and pleasure purposes, that assisted materially to give a vogue to the movement. Beginning with the car used purely for pleasure, the members of these clubs soon began to take a more practical interest in the possibilities of the vehicle, and out of the mass of experience gained emerged the great automobile movement as it has developed to-day. We make no scruple about stating our firm belief that had it not been for these clubs and associations, which even though they may be superfluous to-day were the backbone of motoring in its infancy, automobilism would have been ten years behind its present development. There is no reason to think that the flying clubs which are springing into existence will be any less useful to aviation. On the contrary, there are strong reasons for thinking that their sphere of usefulness will be much greater than that of the early motoring clubs, and from that point of view alone, to say nothing of others that will suggest themselves, we welcome their advent with something akin to enthusiasm.

When Civil Flying May be Resumed

WHEN it was found impossible to arrange for civilian flying to be resumed on April 1, it was hoped that the ban would only have to be prolonged for a month, but it now looks as though it will not be removed before June 1. It is understood that Gen. Sir F. H. Sykes, the Controller of Civil Aviation, has been kept so busy at the International Conference at Paris, that it will hardly be possible to complete the necessary arrangements before that date.

The Canadian Air Force

THE organisation of the Canadian Air Force is proceeding slowly, and it is stated that Col. Mulock, of the Canadian Overseas Ministry, is sailing for Canada to assist the Dominion Government in regard to the establishment and personnel of the new force. It has been decided that two

Canadian squadrons training in England will be sent home as complete units.

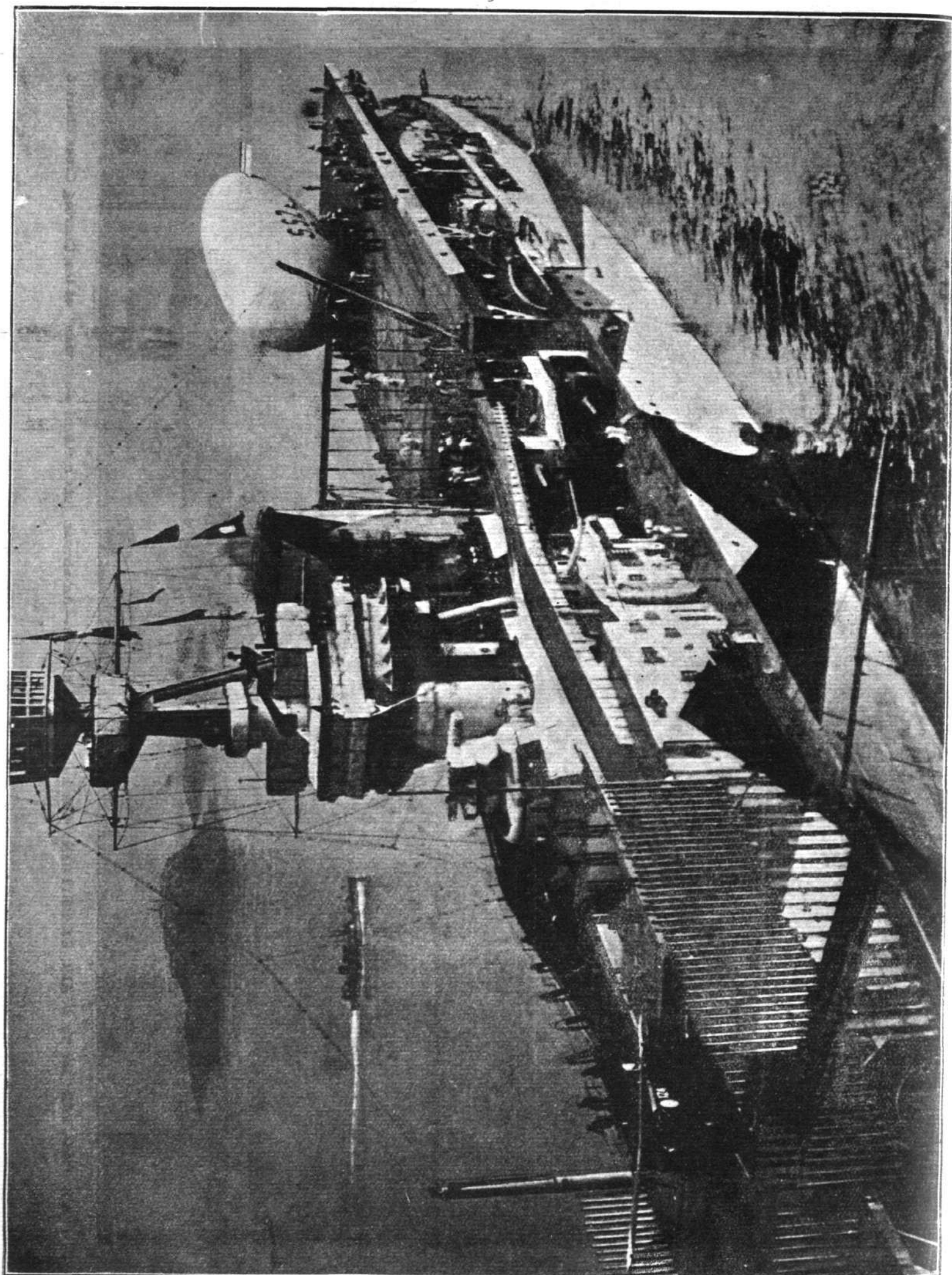
The United States Air Service

FROM information published in Washington, it appears that the plans of the United States Army Air Service call for 1,700 aeroplanes in use with 3,400 in reserve, while the establishment personnel will consist of 1,923 officers and 21,853 men. There would be 87 service squadrons, of which two will be assigned to coast defence work, 20 will be pursuit squadrons, and 25 observation bombing squadrons. A typical United States squadron includes 18 planes.

Brig.-Gen. William Mitchell, who was in charge of the flying service with the United States Expeditionary Force, has succeeded Maj.-Gen. W. L. Kenly, as Director of the United States Army Air Service.



AT THE WAR IN THE AIR EXHIBITION: The hub of the Universe.—An airman gets a “bird’s-eye-view” of the Charing Cross district.



AT THE WAR IN THE AIR EXHIBITION.—The Navy's giant floating aerodrome.—H.M.S. "Furious" is the most remarkable of the Navy's and that means the most remarkable of the world's.

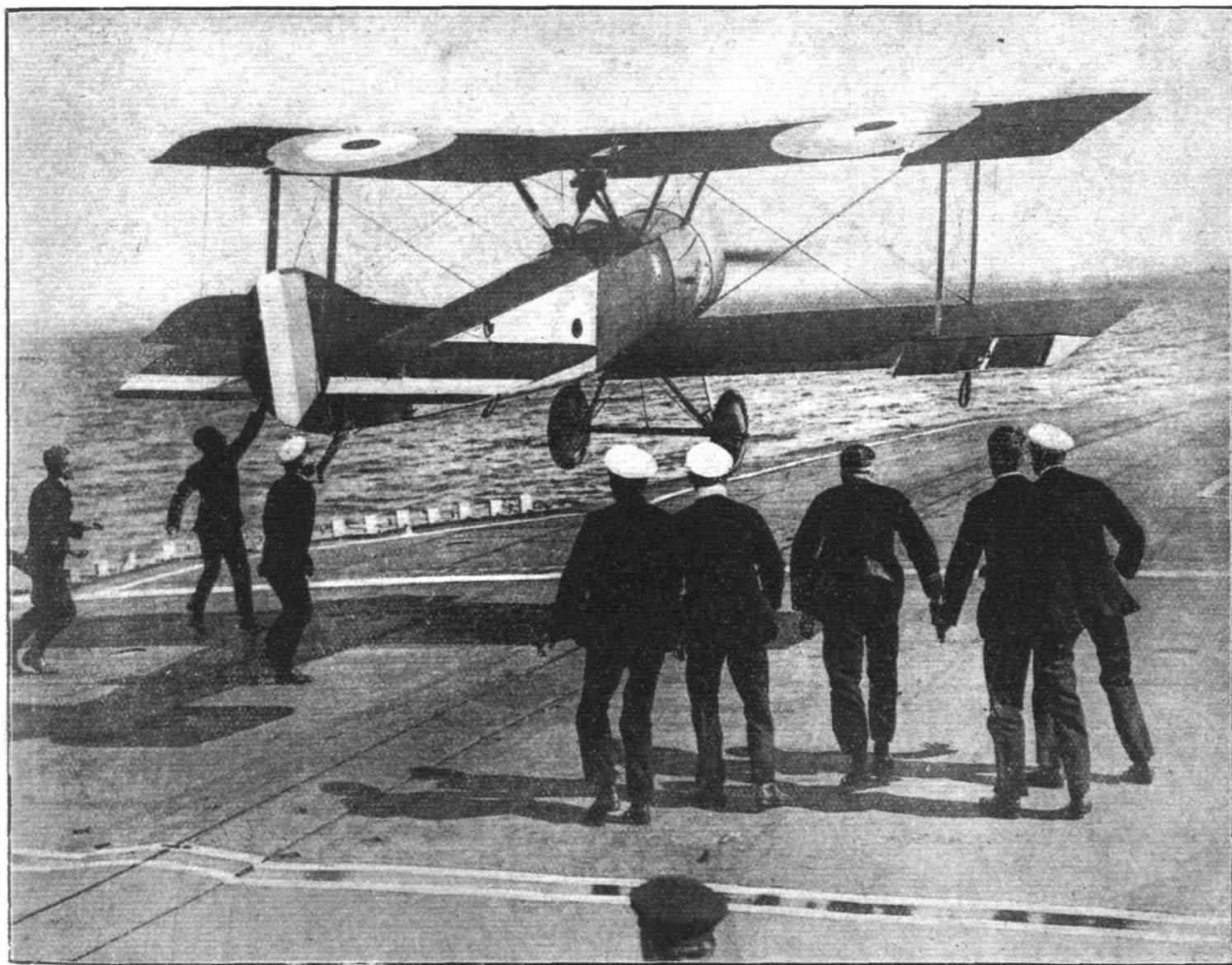
WAR IN THE AIR

A WONDERFUL EXHIBITION

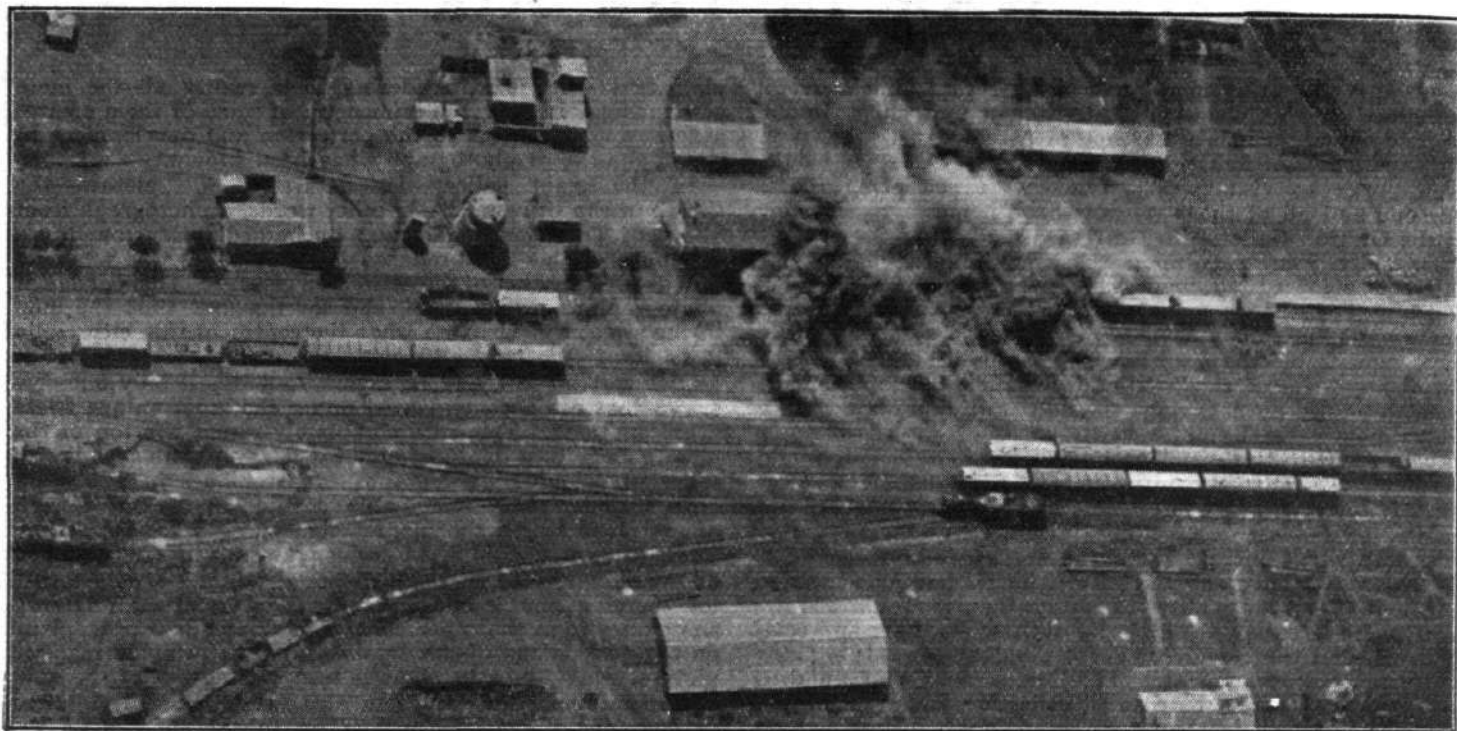
If there is one thing more than another that almost every individual in this country, man, woman and child, would wish to visualise, in the absence of actual experience, it is the experiences of flying. A great many at this stage would even prefer to visualise them *without* experiencing them. For one and all of these we now have a message. Hasten to the Grafton Galleries in Grafton Street, Bond Street, and there feast your eyes upon the two hundred and more enlarged coloured photographs displayed upon the walls, which go to make up the first Exhibition of Royal Air Force photographs in colours. As we noted last week, this is the most remarkable show we have, so far, seen, and it will be surprising to us if this well-known gallery is not crowded even to unpleasantness right through April and May, during which months the Exhibition will remain open. The pictures have a range of subject over so wide a sphere that it would be difficult to find anybody who would not find themselves directly interested in one or more of the enlargements. And having seen these, we cannot imagine any visitor would miss any single picture before finally leaving the galleries. In fact, practically one and all of the photographs have so much in them of reality to study that it would require many visits to satisfy the majority of those who have appreciations of what the Royal Air Force has done towards winning the great European War. Possibly, a couple of hundred pictures may seem to be a small collection for an exhibition but this idea will instantly evaporate upon setting foot in the entrance to the gallery, as the striking feature of the

pictures is their size, rendering their reality all the more convincing. In fact, the immensity of some of them creates a new wonderment as to the perfection and development to which the art of photography has been brought.

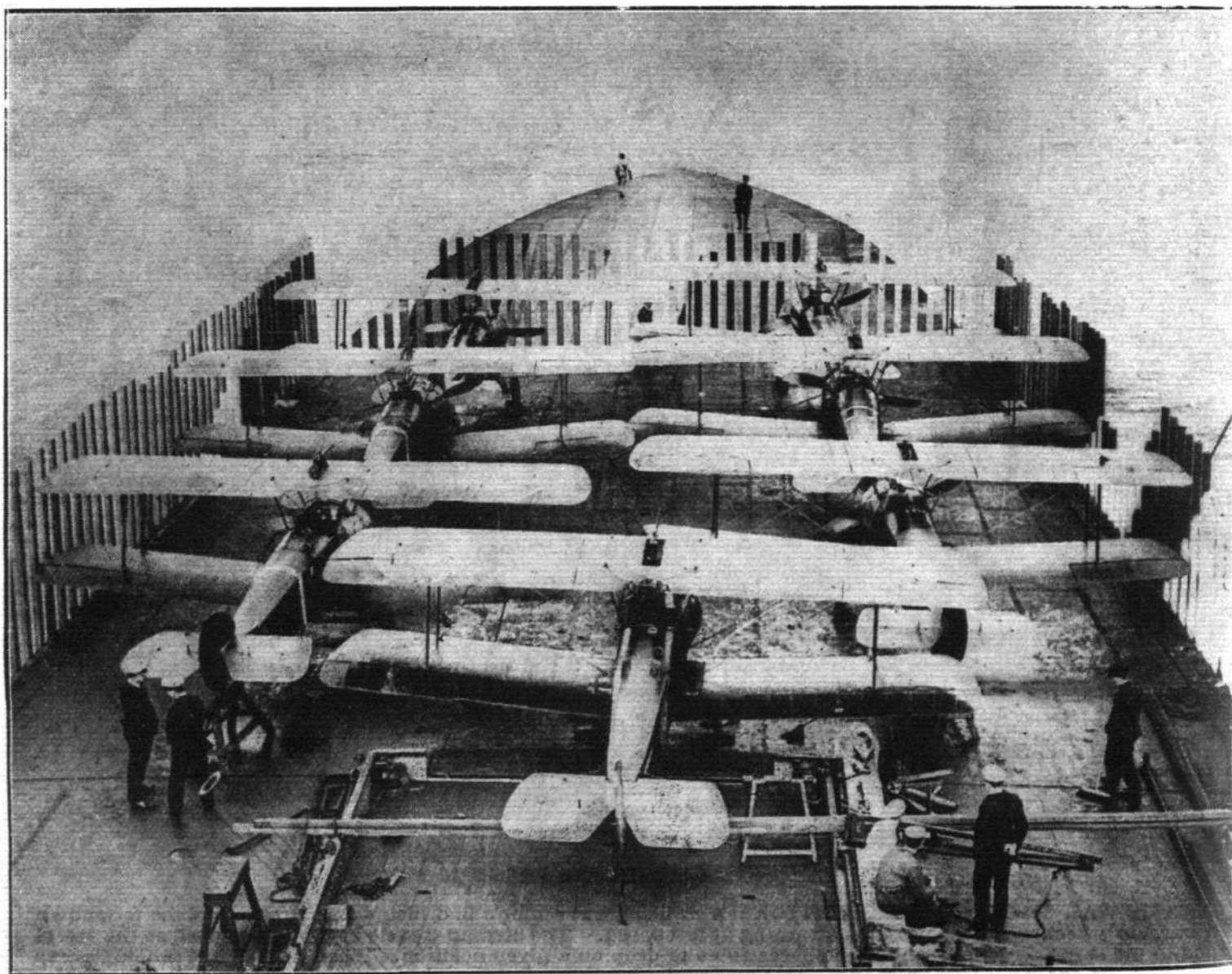
In the main gallery is, naturally, the picture—the “Hub of the Universe”—in other words, a photograph from above of Trafalgar Square and its immediate surroundings. A replica of this is reproduced in these pages this week, as well as several other of the attractive pictures. This particular photograph is reality itself, and for the first time the man in the street can visualise what the centre of this city really looks like. We can only guess the size of the picture—it looks about 20 ft. by 12 ft. high. And this is only one of a crowd that are accommodated under the most unique frieze ever conceived. This runs completely round the top of the main gallery to a depth of about 4 ft., and is an “endless” series of coloured photographs of aeroplanes in pairs and groups, under every imaginable position in the air, a work of art alone worth the modest sum charged for admission. Then there is “H.M.S. ‘Furious,’” which has never been allowed to be seen in public before, with its arrangements for carrying and launching airships one end and fighting aeroplanes from the other end. The “landing” of a plane on the deck is one of the details also seen, a highly realistic picture, whilst another plane is seen coming out of the hold for operations. In this room also are wonderful coloured photographs of the great attack, on July 25, of “M.1,” the latest beast in submarines, Cromer at breakfast time, the



AT THE WAR IN THE AIR EXHIBITION: A difficult feat—pilot's bad luck.—The first aeroplane to land on a warship's deck while the vessel is steaming at full speed.—The airman travels at the same speed as the vessel and in the same direction, and manœuvres so as to drop on a given position. When held by the landing party he stops his engine. This pilot made two successful landings, but was drowned at the third attempt. Great praise is due to the men who volunteered to undertake this dangerous pioneer work, as they knowingly carried their lives in their hands.



AT THE WAR IN THE AIR EXHIBITION : Wholesale destruction.—This photograph illustrates a highly successful bombing raid on Deera Railway Junction (Palestine), which resulted in the destruction of sheds, wireless station and rolling stock. The bombing, which was carried out from a height of 700 ft., inflicted severe casualties on the enemy.



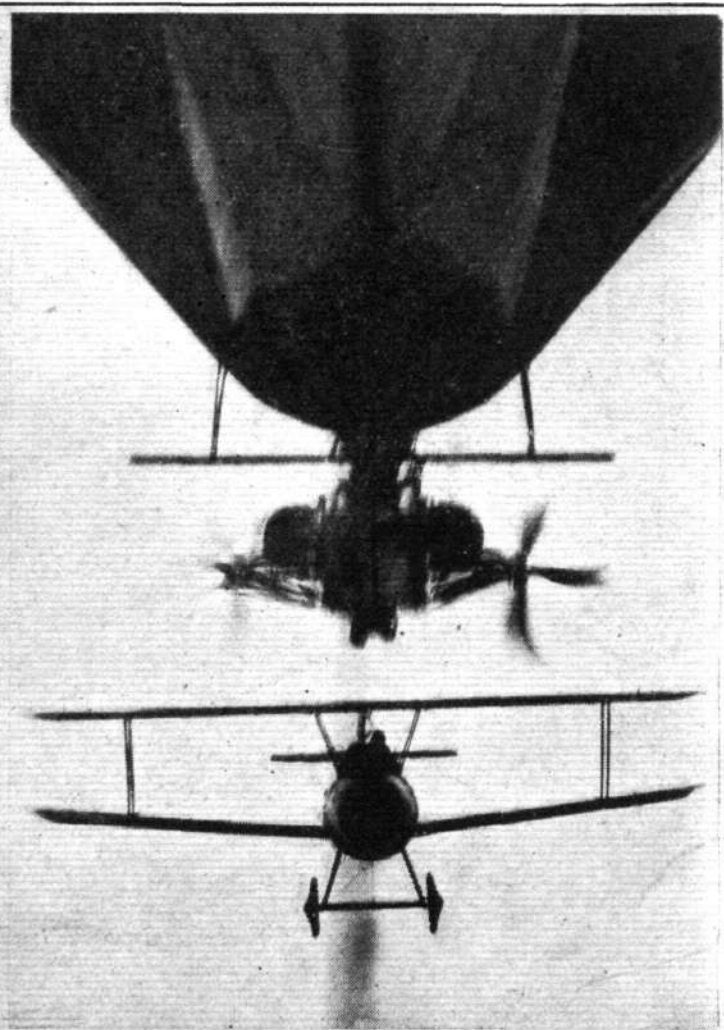
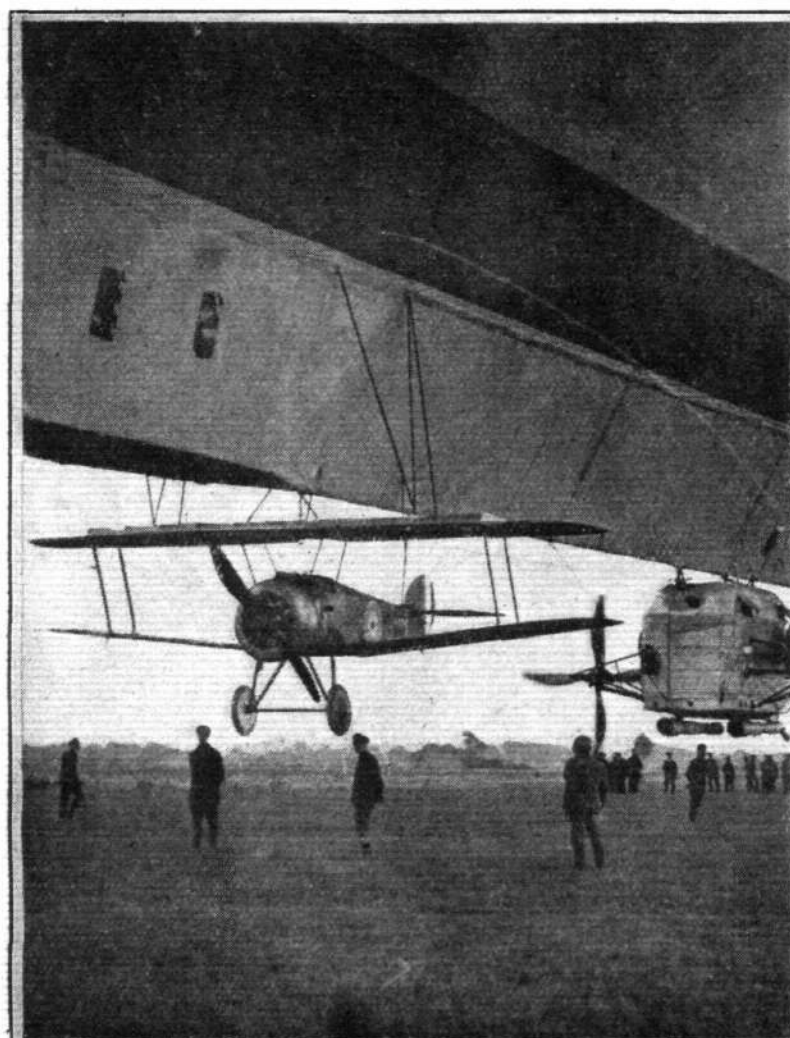
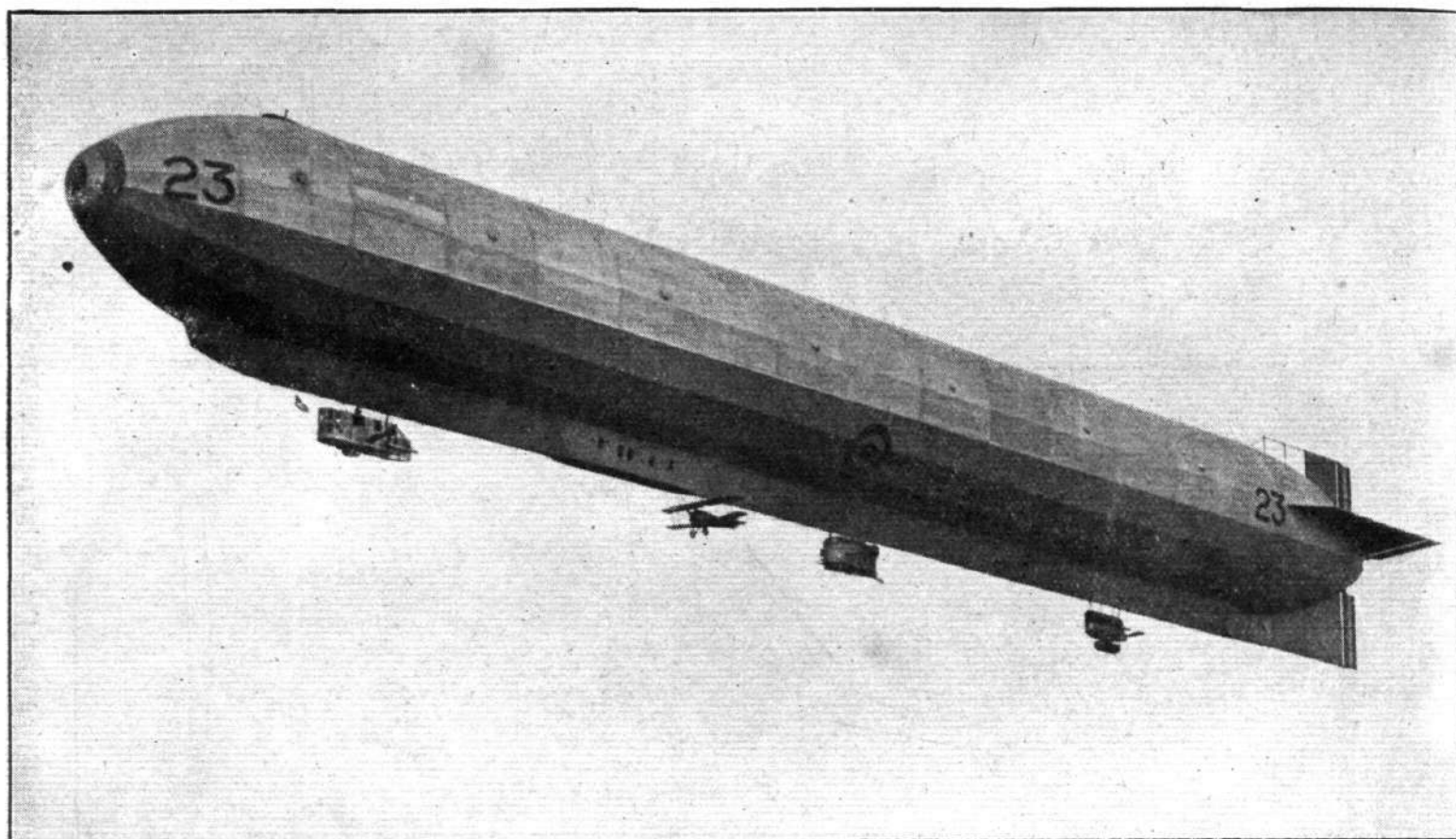
AT THE WAR IN THE AIR EXHIBITION.—"All lined up and somewhere to go." "Off we go to strafe the Zepps." The machines are lined up on the deck of H.M.S. "Furious," ready to fly to the sheds at Tondern, in Schleswig-Holstein, where the Zepps. had a lair. But the bombs found their target, and Germany moaned the loss of her much-prized "Gas-bags," one loaded shed being destroyed and others damaged.

APRIL 10, 1919



FLIGHT
MAY 1919

AT THE WAR IN THE AIR EXHIBITION : Dangers of Flying in Italy.—A squadron of planes flying over the Alpine peaks. The photograph shows the dangers the Allied pilots faced on this front, as there can, of course, be no question of landing here. To do so would be to court instant death.

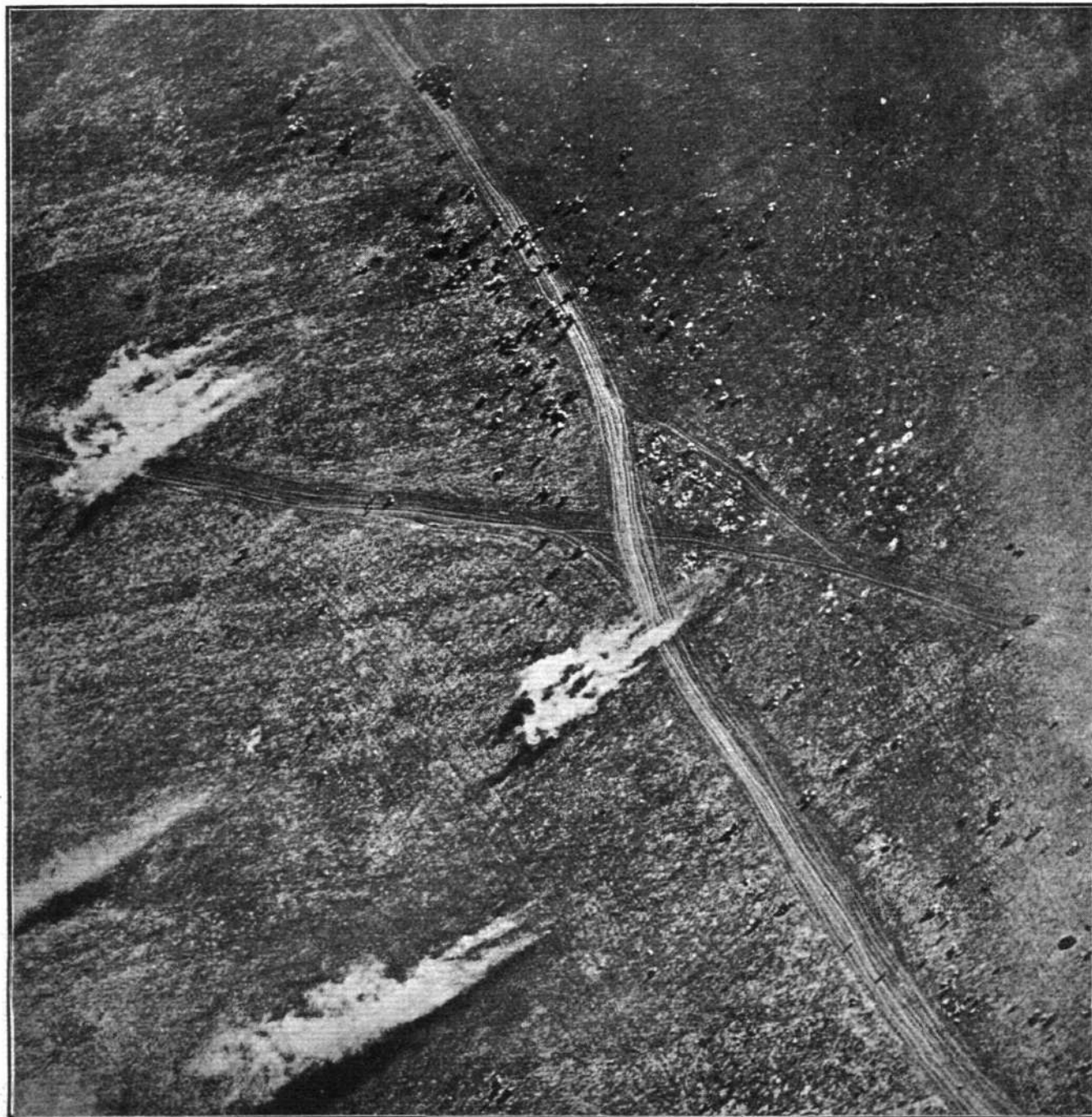


AT THE WAR IN THE AIR EXHIBITION.—Ready to fight the enemy. An airship carrying a fighting aeroplane which can be released instantly in case of attack by enemy aircraft.
BELOW, LEFT, THE AEROPLANE IN POSITION.—This picture shows how the aeroplane is attached to the airship.
AND ON RIGHT, DROPPING OFF.—The aeroplane released from the airship.

train ferry carrying tanks over-seas, H.M.S. "Argus," the aerodrome ship, with its superstructure for the landing and despatch of aircraft, a Turkish station being badly bombed, a squadron of 15 flying over the Alps, a remarkable picture above the clouds of one of our fighting machines on the tail of a Hun machine, which is trying to dodge behind banks of cloud to escape, besides selections of "Wrafs" under various conditions. In other of the Grafton rooms are equally fascinating exhibits.

At the extreme end of the long gallery is a striking picture of a huge Porte sea-boat, which might be passing across the "horizon" as the visitor enters the room. There also are pictures of the smoke-screens before the great attack last year in France, another showing remarkable evidence of our plastering a Hun battery, once it had been located, rows upon rows of Hun submarines as they appeared in Harwich harbour, squadrons of our machines high up aloft with Hun shrapnel merrily bursting all round them, a direct hit upon an enemy ammunition train, and a wonderful view of the great Hindenburg line. By way of a contrast, there is the Jericho Road, where the Good Samaritan rested, and a veritable picture,

from above, of a machine looping. A remarkable picture is the view of the Firth of Forth with a twilight effect, with 30 or more of our warships quietly at rest, ready for any call to action. In the long gallery is seen another view of the deck of the "Furious," with seven planes ready to take off, a formidable German battery on the Belgian coast, and clear evidence of one of the ghastly raids upon our Red Cross Hospitals. A photograph with a great personal interest attached—and the only "personal" one in the Exhibition—is that of Major Barker, V.C., D.S.O. (one bar), M.C. (two bars) and his machine. This should be an historical plane, as it was the custom of this pilot to notch one of the struts regularly for every Hun machine he brought down—about 50 in all—and these, on this particular machine, tot up to 36 notches in all. A breezy scene is the picture of Trafalgar Square on Tank Day, and a suggestive contrast is seen in bombs in the photograph of the smallest and the largest bombs of the R.A.F. (the latter of which, Berlin, by the armistice, just managed to dodge), as compared with a man and a 12-ft. measure on end. A curious comparison in a couple of pictures under each other is a torpedoed ship with



AT THE WAR IN THE AIR EXHIBITION : R.A.F. bombs turn defeat into a rout. Turks fly panic-stricken.—This photograph, taken on the road to Damascus, shows Turkish troops flying wildly in all directions in a vain effort to escape the British airmen's bombs which were being dropped with such deadly accuracy and persistency on them. Men and transport were subjected to a continuous bombardment for four hours on the morning of September 24, 1918, the departure of the machines being so timed that two should arrive over the objective every three minutes and two additional formations every half hour. The head of the column was attacked while passing through a narrow gorge, and the road was completely blocked with wreckage. On the arrival of our troops eight miles of road was found to be blocked with ruined war material. Included in the booty were 87 guns, 55 motor lorries, 4 motor cars, 75 two-wheeled wagons, 837 four-wheeled wagons, 20 water carts, and field kitchens.

its camouflaged sides, and a whale. This mammoth denizen of the seas had often to pay the penalty for its similarity to an enemy craft. There is also an instructive photo of our Fleet meeting the surrendered German Fleet, our smokeless funnels being a revelation, as compared with the volumes of smoke issuing from the German warships. A picture of the method of changing kite-balloon crews at sea has quite a fascination of its own, and the trio of photos showing Airship 23, with its scouting plane attached beneath, the method of attaching, and the plane parting from its "mother," reveal one of the methods employed during the war to attack and to protect our dirigibles when on scouting work bent.

Altogether, the R.A.F. Exhibition of War in the Air photographically illustrated, is the most worthy of any exhibition that we have seen for a decade. Those who miss it will, when they hear others talking about it, probably regret it but once—and that will be for the rest of their life.

At the official opening on April 2, Lieut.-Col. Moore-Brabazon, M.P., who presided, described the exhibition as the culminating point of photography in the Royal Air Force. The pictures, he said, could be divided roughly into two categories; firstly those relating to the purely military side of the War, and secondly, those connected with the work of propaganda and the record of experiments. Dealing with the development of photography on the military side, he said it was started under the auspices of Gen. Sykes in the early part of 1915, with two hand cameras of the ordinary commercial type, and the work grew until at the end of the War, in France alone, they were delivering to the troops no less than 1,500,000 photographs a month. In what they

accomplished the members of the Air Force were not working for themselves, but for the other services—the Navy and the Army.

It was impossible to estimate the number of lives that were saved through aerial photography. No attack could have been delivered, nor could it have been successful, if it had not been for the detailed photographs of the position that the troops were about to storm. They would all pay a tribute to the men who by their gallantry were able to place such valuable information in the hands of the General Staff. Every photograph taken by the R.A.F. was carefully stored, and there was not a position ever held by British troops up and down the front at any time a picture of which could not be got at very short notice.

The Marquis of Londonderry, who performed the opening ceremony in place of Gen. Seely, the Under-Secretary of State for Air, who had been called to Paris, said that it was necessary in the exigencies of War to maintain secrecy; but the beautiful photographs on exhibition showed the high state of efficiency to which photography had attained. They brought out in brilliant relief the dazzling achievements of the airmen.

Their exploits were so countless that it would be impossible to give them all the credit which they deserved; but he thought he was entitled to say that the great success that had been achieved, and an early peace, was as much due to the part that the airmen played in the War as to that of any other portion of the fighting forces.

Among those present at the opening of the exhibition were Gen. Sir F. H. Sykes, Maj.-Gen. E. D. Swinton, Gen. Sir W. S. Brancker, Gen. Ellington, Gen. Lambe, and Maj. Laws, and Prince Albert was one of the earliest visitors.



AT THE WAR IN THE AIR EXHIBITION: Aeroplane does good recruiting work.—Mideia (Arabia), a friendly village, seen from the air. The natives had never seen an aeroplane before, and were intensely excited when our machines arrived. The effect was excellent, and many of them, as the result of the visit, joined the British Army or some friendly force. In the centre is the market place.

THE GOVERNMENT INSURANCE SCHEMES

THE following details are extracted from a White Paper giving preliminary results of the Government War Insurance Schemes:—

Aircraft and Bombardment. Scheme No. 23.

In accordance with the report of the Aircraft Insurance Committee in July, 1915 (Cd. 7997), the insurance of property against aircraft and bombardment risks was undertaken by the Government. The rates recommended by the Committee were adopted at the outset, and in February, 1917, a discount of 50 per cent. was allowed on these rates.

Approximate premium received up to November 30, 1918	£ 13,610,000
Claims paid and estimate of outstanding losses	2,970,000
Balance	10,640,000

It is estimated that outstanding premiums will be sufficient to meet outstanding claims.

Aircraft and Bombardment (Egyptian Cotton). Scheme 24.
It was represented to the Board of Trade in April, 1918,

that merchants and banks were unable to obtain cover at reasonable rates against the risk of aircraft and bombardment damage in respect of the cotton lying in warehouses or stores in Egypt and in transit to the stores by road, rail or river in Egypt or the Soudan, and it was agreed that this cotton could be insured at the War Risks Insurance Office, the rate of premium being 4s. per cent. for one month, 8s. per cent. for three months, or 12s. per cent. for six months.

Premium received up to date	£ 7,200
Losses	Nil.

Since September 1, 1917, owners of property in the United Kingdom of an aggregate value not exceeding £500 have been entitled to compensation in the event of their property being damaged or destroyed as a result of air-raid or bombardment; owners of property exceeding £500 in value were also entitled to compensation if the excess over £500 was insured under the Government Aircraft and Bombardment Insurance Scheme. 5,553 awards have been made by the Air Raid Compensation Committee up to February 28, 1919, the amount being awarded being £101,402 18s. 5d.

Aircraft Material Released

THE Secretary of the Air Ministry makes the following announcement:—

In order to assist civil aviation and to enable firms interested in aviation more easily to carry out their programmes, it has been decided to release a certain amount of material, particularly engines, and aeroplanes originally ear-marked for the use of the R.A.F.

Civilian firms, therefore, desirous of obtaining aeroplanes, engines, or other material should, in future, apply in the

first place direct to the firm concerned in the manufacture of the material required. Should the firm approached be unable to meet the request owing to existing contracts for delivery to the R.A.F., a request for the release of such material will be considered by the Air Ministry. All such requests should be addressed to "Secretary, Air Ministry (C.G.C.A.)," and should state specifically that the firm responsible for the manufacture of the material required has already been approached, but owing to existing contracts, has been unable to supply.



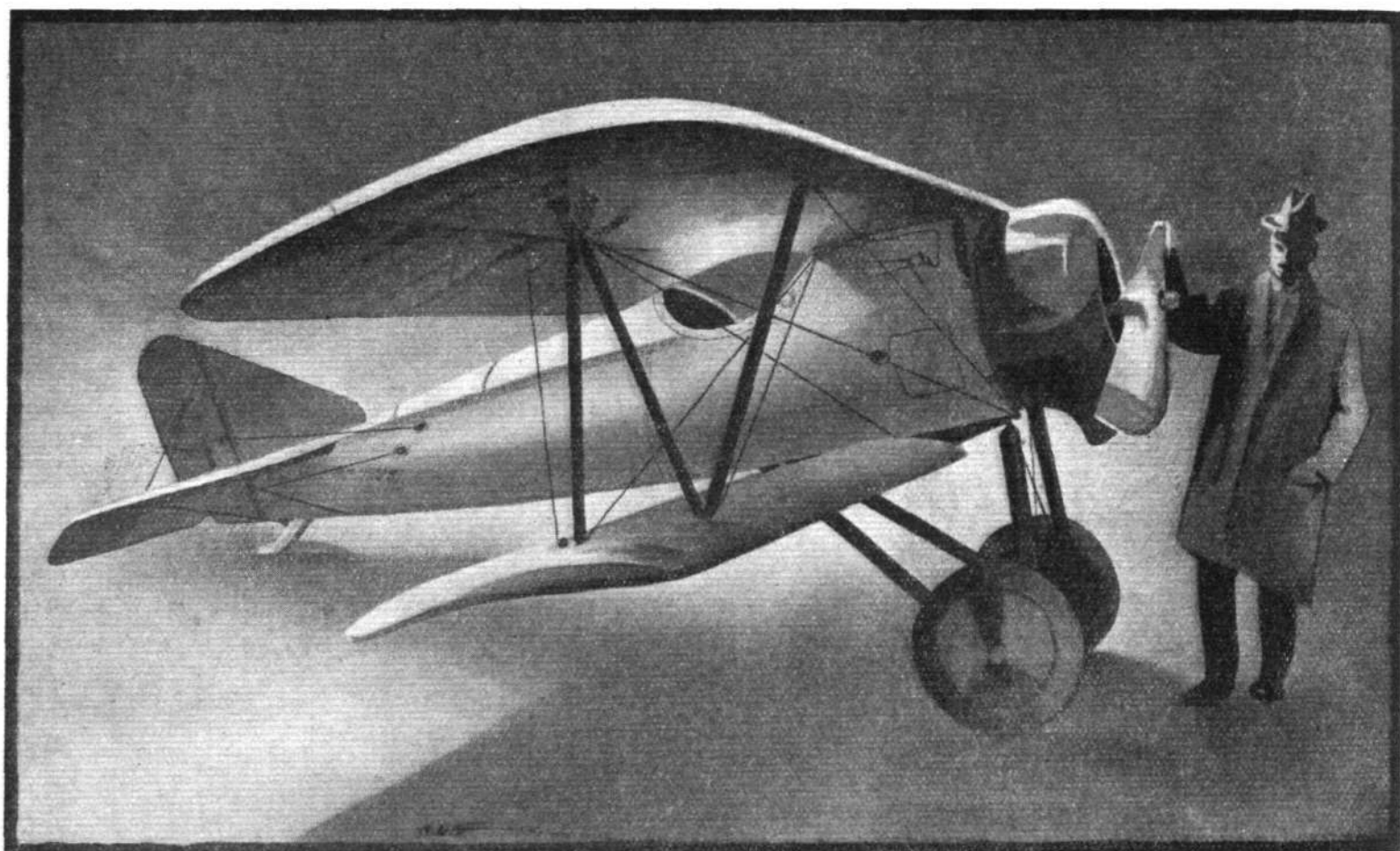
AT THE WAR IN THE AIR EXHIBITION.—A walled city. A view of Samarra from the air. The pilots of the R.A.F. had this advantage, in that many of them were privileged to see some of the wonders of the East.

AN INTERESTING GRAHAME-WHITE SPORTING MODEL

WITH the coming of peace there will undoubtedly be a great demand for aeroplanes for a variety of peace time purposes. The large twin- or multi-engined machine for the carrying of mails and passengers, seaplanes of various types for work over the sea and for short pleasure cruises around our coast towns, racing machines for use in speed competitions, touring machines for the private owner, and so one could go on enumerating the various fields that will have to be catered for by the aeroplane constructor. The machine described in the following notes is designed, as the title indicates, for sporting purposes, but is not, we may point out, a racing machine in the ordinary sense of the term, although it might very well be used for a race around the pylons at Hendon as of old, should those merry old times come back again.

The feature which impresses one most on first seeing this Grahame-White model, to which the name of the "Bantam" has been given, is its extremely small size. As a matter of fact, the G.W. "Bantam" is, we think, the smallest biplane

first time that this machine had been looped, and she did it without a hitch. As regards her handling in the air, she appears capable of practically all the evolutions performed by the higher-powered machines, although her lower power naturally does not allow of such steep climbs or prolonged "Zooms" as may be tackled with immunity in single-seaters designed for military purposes and fitted with engines of three or four times her power. So far as we were able to judge the machine is very sensitive on the controls, both laterally and longitudinally. This is, presumably, due to her small moments of inertia around all three axes, and to the general compactness of the machine. The present model is an experimental one, and if during the very exhaustive trials now being conducted daily by Capt. Chamberlain it is found that the machine is a little too sensitive, this matter can probably be altered by fitting smaller *ailerons* and elevators. It is probable, however, that the majority of ex-service pilots who will purchase such a machine will consider this sen-



A SKETCH OF THE GRAHAME-WHITE "Bantam."—The man standing in front gives a good idea of the small size of this machine.

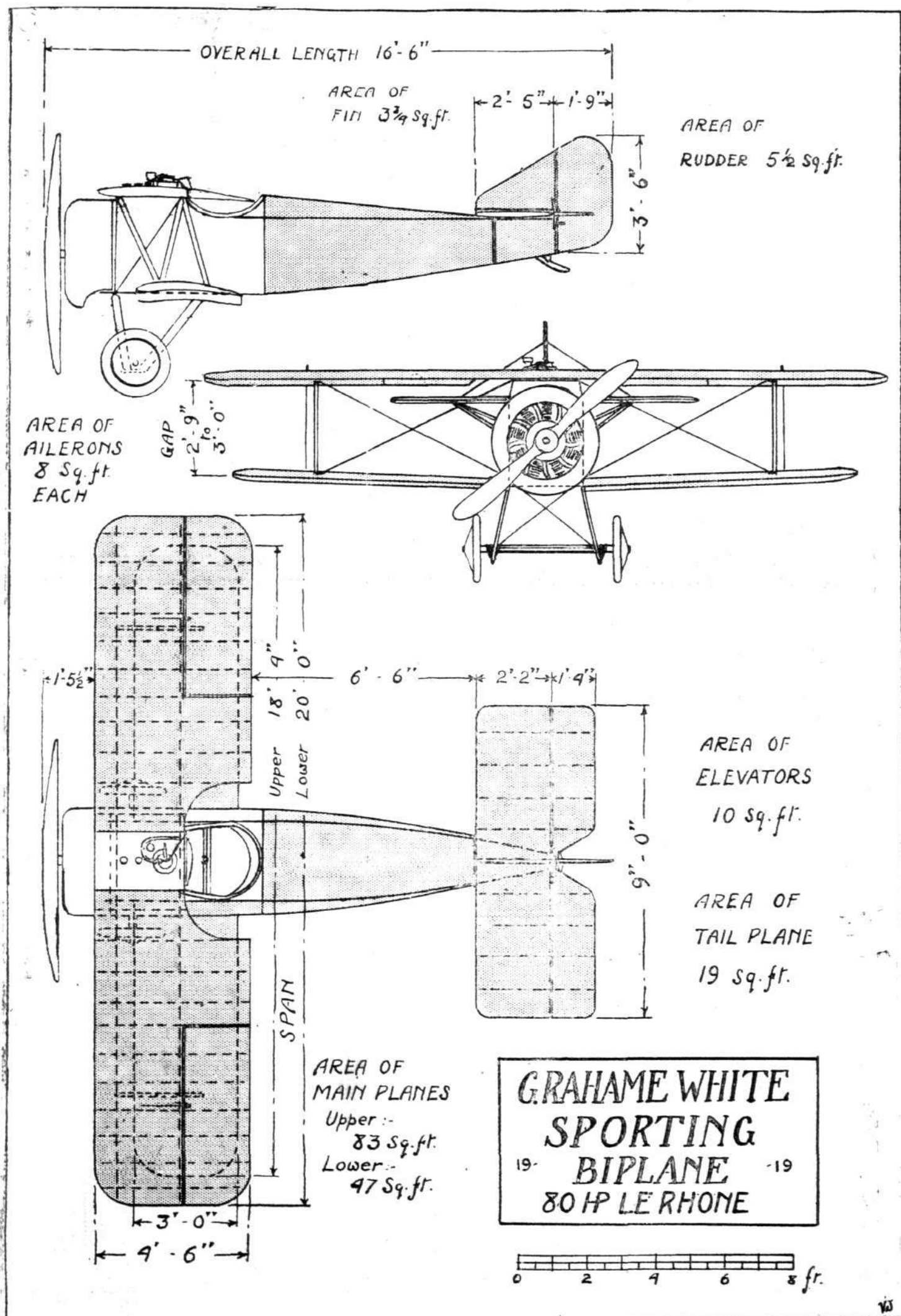
we have seen, with the exception of the diminutive Piggott biplane built for the Military Trials of 1912. The span of the G.W. "Bantam" is only 20 ft. and its overall length 16 ft. 6 ins., so that it may be housed in a very small shed. The smallness of the machine will, perhaps, be more evident from an examination of one of the accompanying illustrations than it would be possible to convey by any quotation of figures. The man shown standing in front is drawn to correct proportions and shows the compactness of the machine.

As already mentioned, the G.W. "Bantam" is not a racing machine, the wing section having been designed with a view to fairly high lift rather than for high speed. In spite of this fact, however, the maximum speed is quite good—about 102 m.p.h. at low altitudes and 93 m.p.h. at 10,000 ft. As the engine fitted is of 80 h.p. (1e Rhone), this is not a bad performance, especially as the climb appears to be very good. The landing speed is about 40 m.p.h.

When we saw the machine in flight last week at Hendon, she was piloted by Capt. Chamberlain, who did a series of spins on her and also a loop. This was, we understand, the

sensitivity an advantage rather than otherwise, and will prefer an ample amount of control.

Constructionally the G.W. sporting model shows many detail features that are of interest, some of which we have illustrated in the accompanying sketches. The object which the designer, M. E. Boudot, has kept in mind in getting out the details is simplicity and ease of manufacture. The construction of the wings follows more or less standard practice as regards the details. The spars, which are of I-section spruce, rest in mild steel boxes to which are attached the lugs for the interplane struts, and also the wiring plates and sockets for the compression tubes of the internal bracing system. In the accompanying set of sketches Fig. 1 shows one of the top plane front strut attachments. The spar box has riveted and brazed to it the lug for the interplane strut, and is extended inwards to form the wiring plate for the front lift cable. Two vertical bolts secure the box to the spar, while the wiring plate for the internal drift bracing is attached to the spar and to the box by two horizontal bolts. (Fig. 2.) A somewhat unusual feature of the top plane is the position

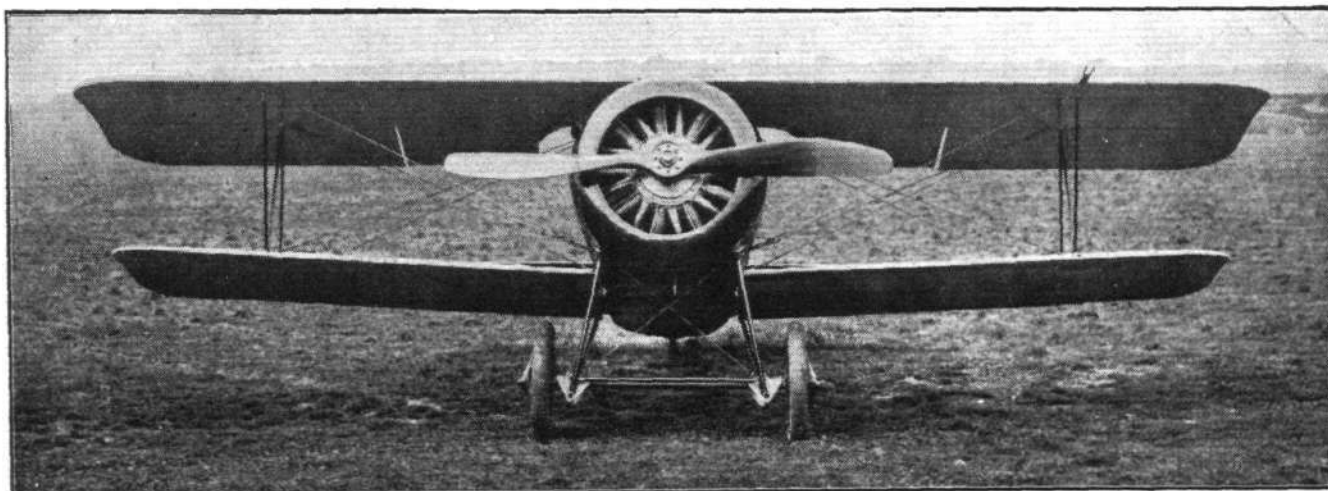


THE GRAHAME-WHITE "BANTAM."—Plan, side and front elevations to scale.

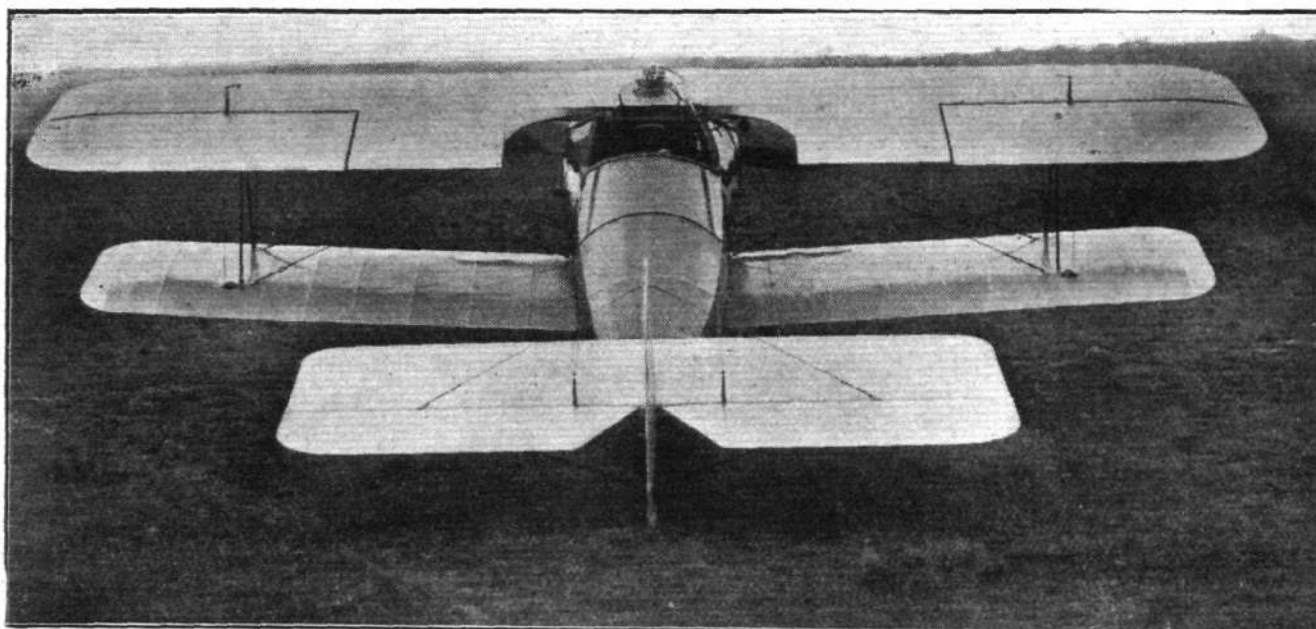
of the rear spar, which is a good deal farther forward than is the custom. This is done in order to make it clear the pilot where it crosses the *fuselage*.

The top plane runs straight across from tip to tip without any dihedral, and is attached to the top of the *fuselage* by a

very strong box-like structure, covered in with the rest of the body and containing the main petrol tank. The rear face of this box serves as a support for the instrument board. The petrol service tank is enclosed in the centre of the top plane.



Front view of the G.W. "Bantam."



Rear View of the G.W. "Bantam."

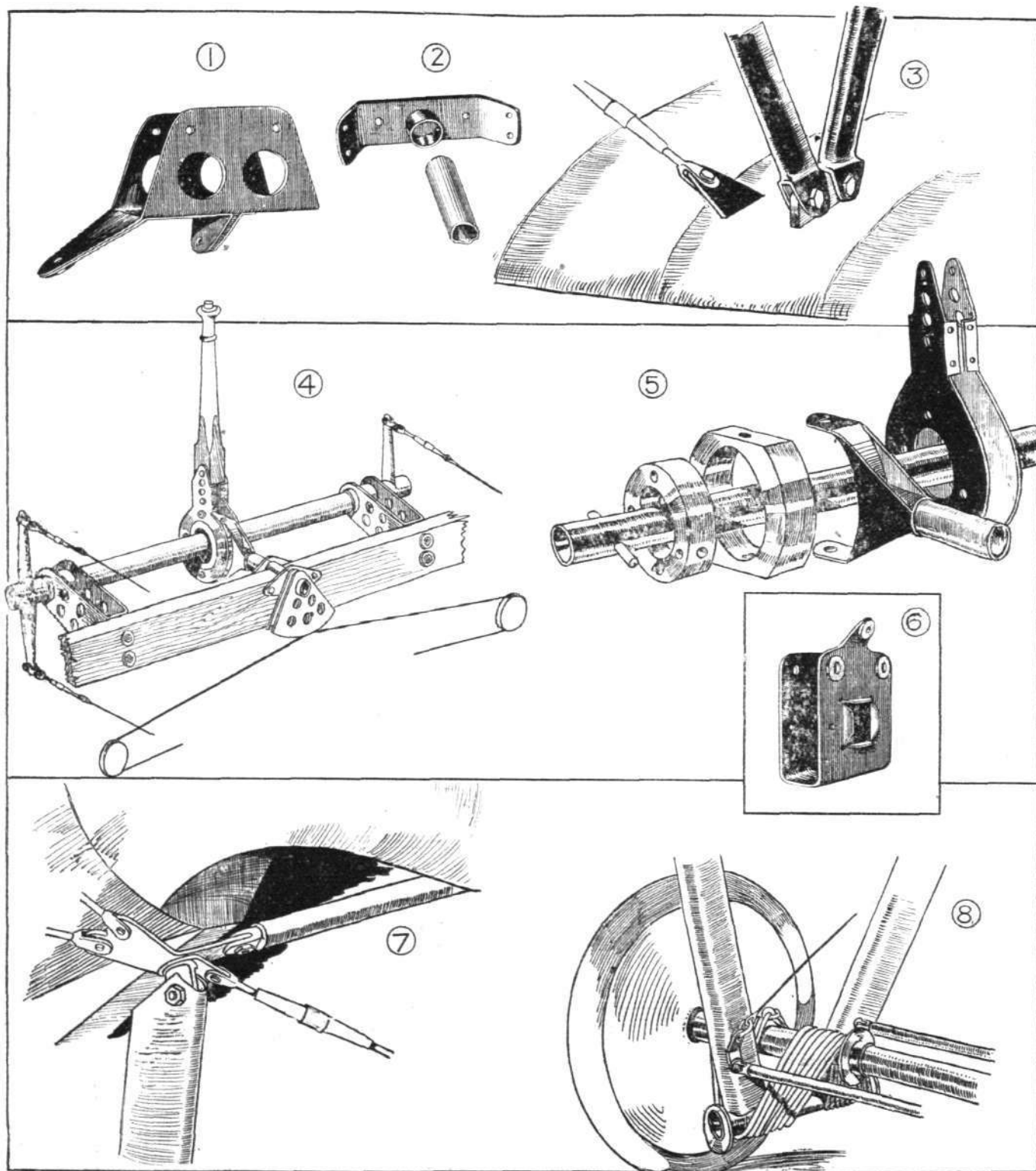


THE G.W. "BANTAM,"—Three-quarter rear view.

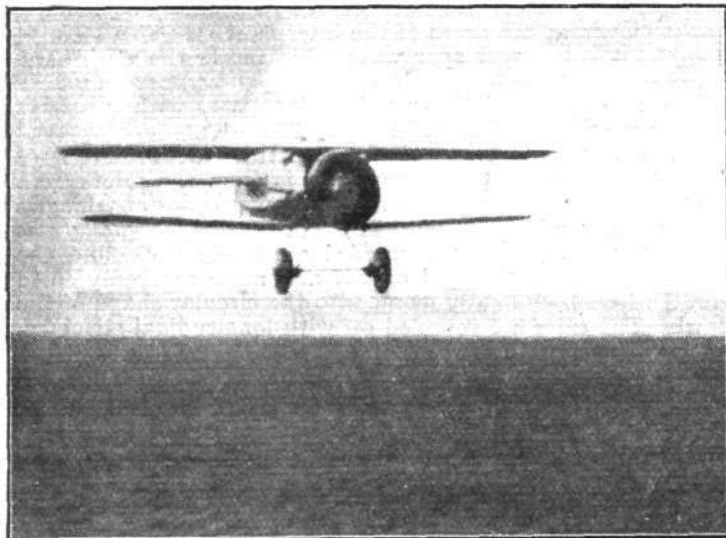
The bottom plane is built in two halves, each attached to the ends of two short lengths of spars permanently fitted under the bottom of the fuselage. The front spar attachment is situated between the front and rear chassis struts, while the rear spar attachment coincides with and is part of the rear chassis strut fitting. The bottom plane spar fittings are of the same type as those of the top plane. Fig. 3 shows the bottom front spar fitting in external view. In principle it is the same as that shown in Fig. 1, but the lug has accommodation for two interplane struts, the struts being arranged in this machine in the form of a letter N. The struts are elliptical section steel tubes. This same N formation is also found in the lift bracing, which consists of plain stranded cable. In addition to the usual two lift cables there is a third one running from the top of the rear interplane strut to the attachment of the bottom front spar to the fuselage. The obliquity of this third cable assists in relieving

the internal drift bracing of some of its load. The landing cables run from the bases of the interplane struts to a single point at the top rear spar where this meets the top of the fuselage.

The fuselage is of the usual girder type, with longerons of rectangular section solid ash. The struts are vertical in the rear portion of the body, and the bracing here is of solid wire. In the front part, that is from the pilot's seat forward, the body struts are arranged as a series of triangles without any wire bracing. The bottom of the fuselage is flat, but the top is surmounted by a turtle back, and the sides are slightly rounded off aft and more markedly so in front, where they finally merge into the circular shape of the cowl. The sides are rounded off with longitudinal stringers, which are attached direct to the vertical body struts in the rear portion, while in front, where the curvature is more pronounced, they are secured to light three-ply formers. The



SOME CONSTRUCTIONAL DETAILS OF THE GRAHAME-WHITE SPORTING MODEL.—1. The spar box and lug for attachment of interplane strut. 2. The wiring plate and socket for tubular compression strut of internal bracing. 2 is secured to 1 by two horizontal bolts. Fig. 3 is an external view of the attachment to the bottom front spar of the interplane struts. The controls are shown in Fig. 4, details of which are indicated in Fig. 5. Fig. 6 shows the fuselage clip. Details of the undercarriage are shown in Figs. 7 and 8.



The G.W. "Bantam" in flight, piloted by Capt. Chamberlain.

covering of the body is fabric in the rear half and three-ply wood in front.

The controls are of a very neat type, and are illustrated in some of the accompanying sketches. The details of the universal joint of the control stick are somewhat unusual and form the subject of a sketch. On the dash in front of the pilot are mounted a very complete set of instruments, conveniently arranged. The engine plate is one of the lightest we have yet seen, weighing as it does only 12 lbs. It consists of the usual capping plate over the nose of the fuselage, made of 14 gauge steel and further lightened by circular holes, flanged to give greater rigidity. The rear engine-bearer is formed by a pyramid of channel section members bolted to the main engine plate and carrying at their other end—at the apex of the pyramid—the rear engine support. The engine—an 80 h.p. le Rhone—is overhung and is surrounded by an aluminium cowl. At present no "spinner" is fitted, but later it is intended to fit one over the hub of the airscrew. The latter has, we understand, been designed according to data furnished by M. L. de Bazillac, who has devised a method which affords, by the simple use of a series of charts, the simultaneous solution of both aerodynamical and static propeller problems at a glance without any involved calculations, all such data as diameter, pitch angle, blade sections, intake velocity, etc.

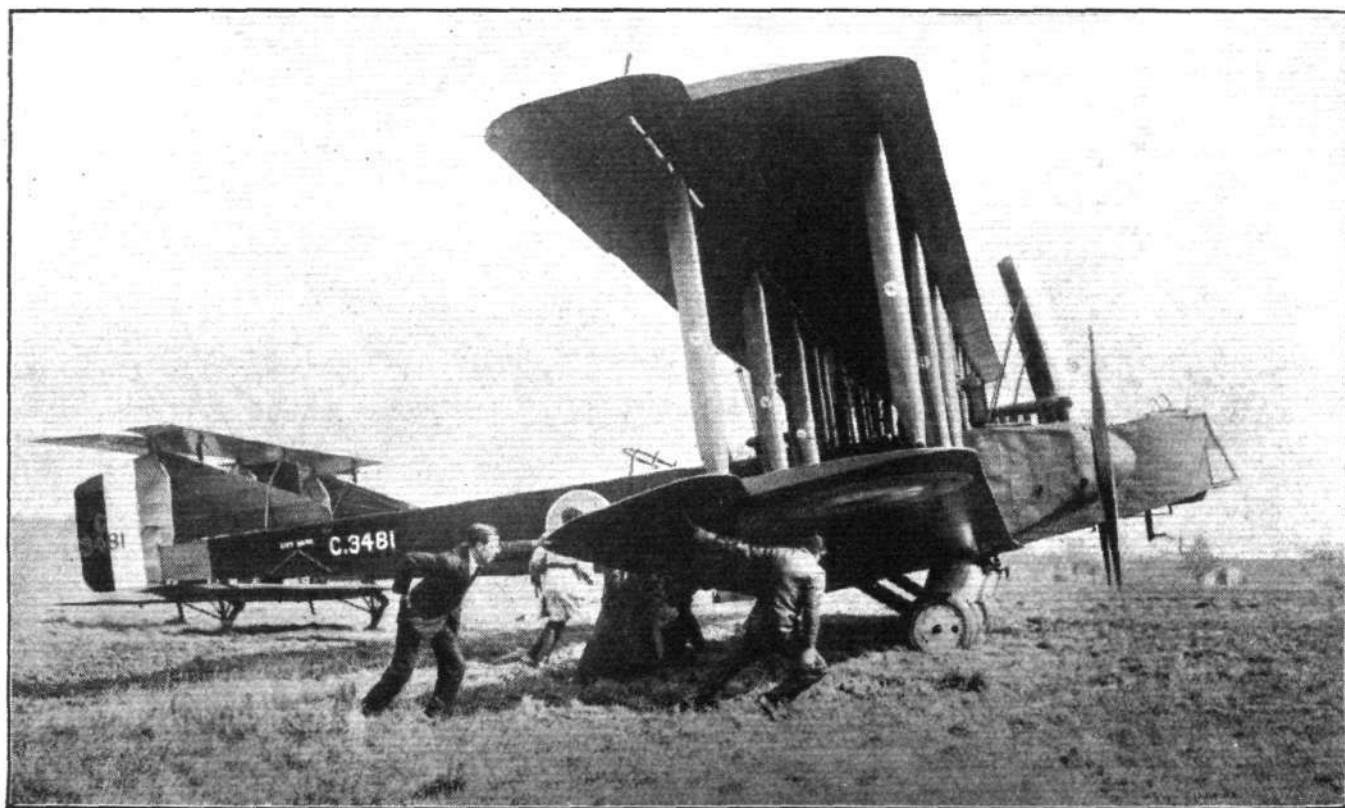


Capt. Chamberlain, the
 G.W. pilot of the Gra-
 hame-White "Bantam,"
 in the cockpit, and
 standing against the
 machine, M. E. Boudot,
 the designer

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□

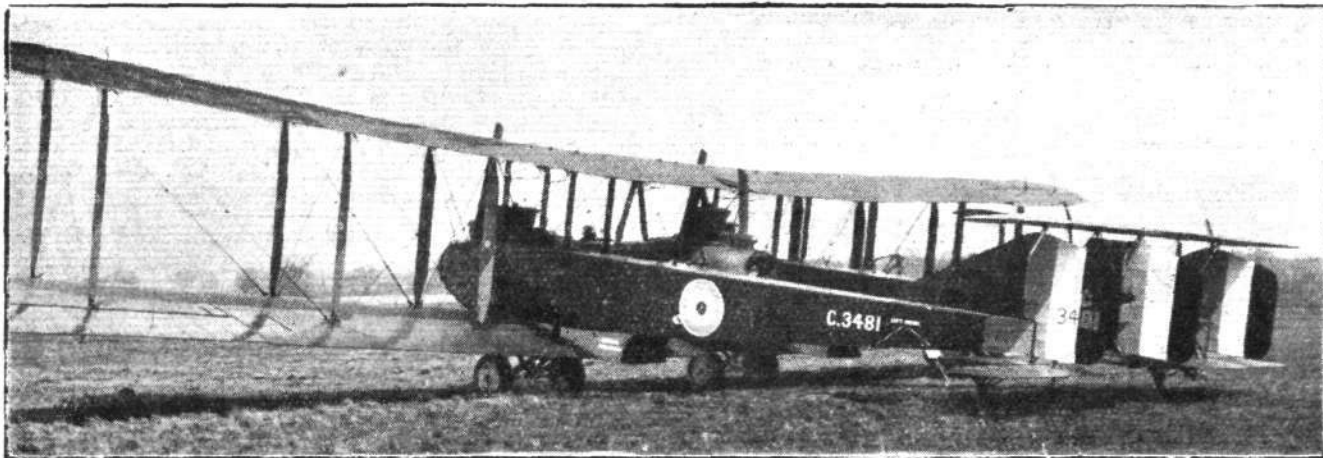
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THE GRAHAME-WHITE DAY BOMBER "GANYMEDE."—This machine is fitted with three Sunbeam "Maori" engines of 270 h.p. each. Near the ground the speed is 105 m.p.h., and at 10,000 ft. 93 m.p.h. The landing speed is about 52 m.p.h. The total weight of the machine loaded is 16,000 lbs., and she has an endurance of nine hours at 10,000 ft. The photograph shows the machine being wheeled out in readiness for a flight.

being read off directly on the charts. As the machine is so small, it has been desirable to fit a propeller of very small diameter so as to keep down the height of the undercarriage, and this fact formed a severe test of M. de Bazillac's method. However, the efficiency appears to be good in spite of the small diameter allowed, and the method appears to have been proved very satisfactory. Certainly for quickness it has much to recommend it.

At the point where the struts meet this tube internal reinforcement is provided to afford extra strength. There are two cross tubes in the undercarriage, one in front of the axle and one behind it. These are bolted to the chassis struts, the bolts passing through short lengths of tube welded into the struts, so that the compression caused by tightening up the bolts does not fall on the thin walls of the struts, but on the short lengths of tube welded into them transversely. The

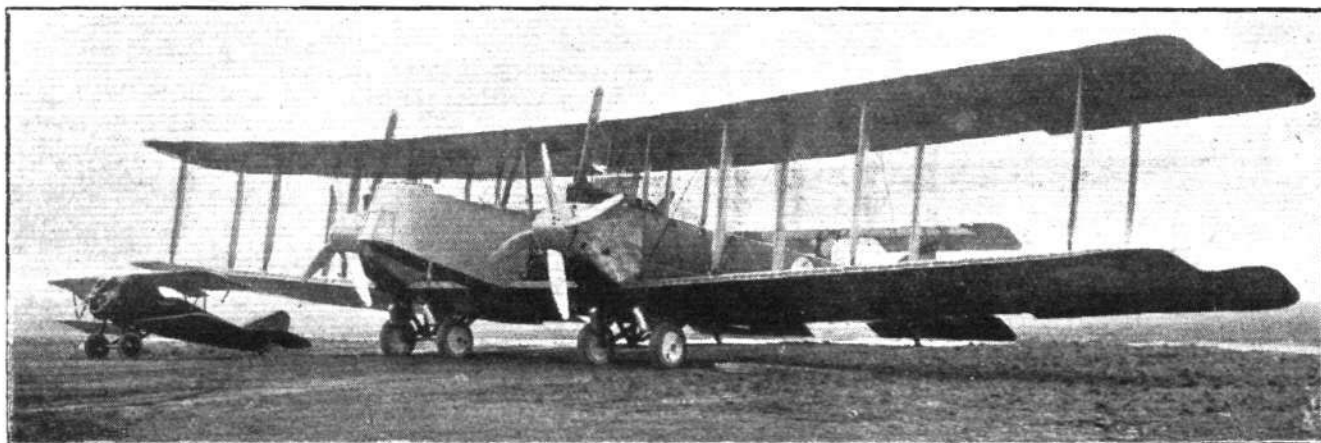


Three-quarter rear view of the Grahame-White day bomber "Ganymede."

The undercarriage is a simple Vee type, with struts of stream-line section steel tubes. The manner of attaching these struts to the body is shown in one of the accompanying sketches. A very stout eyebolt passes through the bottom longerons and through a heavy gauge wiring plate, the outer end of which serves as an anchorage for the lift cables, and the inner end of which is attached to a steel tube running

whole undercarriage is of the simplest type imaginable, and looks very sturdy for such a little light machine. It is almost superfluous to add that the wheels are of the disc type.

The following brief particulars should be of interest: Weight empty, 640 lbs. Weight fully loaded, 995 lbs. Weight per horse-power, 12.45 lbs. Load per square



THE LONG AND THE SHORT OF IT.—The Grahame-White "Bantam" standing under the wing of the G.W. bomber "Ganymede."

horizontally across the bottom of the fuselage. Thus, when the machine is in the air this transverse tube is in tension owing to the pull of the lift cables, while during landing shocks it is put into compression owing to the angularity of the undercarriage front struts. The details will be clear from the sketch. At the bottom the two chassis struts meet on a short longitudinal tube to which the rubber cord is attached.

foot, 7.51 lbs. Tank capacity, 2.3 hours. Speed at low altitudes, 102 m.p.h. Speed at 10,000 ft., 93 m.p.h. Landing speed, 40 m.p.h. Disposable load apart from fuel, 200 lbs.

As regards price, it is at present somewhat difficult to settle on a fixed price, but we understand that the sporting model will probably cost about 500 guineas.

The Prince of Wales over London

ON Monday afternoon the Prince of Wales visited Cricklewood, and went for a flight over London on a twin-engined Handley-Page machine piloted by Lieut. Carruthers, R.A.F., the other passengers being Lady Joan Mulholland, Lord Claud Hamilton and Admiral Mark Kerr.

On Tuesday the Prince of Wales and Prince Albert visited Croydon, and both made ascents in Avro machines. Prince Albert went up in a machine with Lieut. Coryton, who is acting as his flying instructor, while the Prince of Wales accompanied Maj. Bird.

The Paris-Bordeaux Mail Service

IN connection with the aerial mail which has been working satisfactorily between Paris and Bordeaux since March 23,

Sergt. Tetard and Sergt. Dutour made a noteworthy performance on April 2 by doing the double journey in one day. With three bags of official correspondence they left Le Bourget at 10.5 a.m., and landed at Bordeaux at 1.30 p.m. Later in the day they returned to Paris.

A serious accident occurred on April 7, one of the postal aeroplanes catching fire on landing. Both the pilot and observer were badly burned, and the mails and aeroplane were destroyed.

From Lyons to Rome by Air

LEAVING Lyons at 9.16 a.m. on April 6, Lieut. Roget, accompanied by a mechanic, flew to Rome, where he landed at 4 p.m. The distance, in a straight line, from Lyons to Rome is about 500 miles.

THE ROYAL AERO CLUB OF THE U.K.

OFFICIAL NOTICES TO MEMBERS.

SPECIAL COMMITTEE MEETING

A SPECIAL MEETING of The Committee was held on Tuesday, April 8, 1919, when there were present:—Lieut.-Col. F. K. McClean, in the Chair, Mr. Ernest C. Bucknall, Lieut.-Col. Spenser D. A. Grey, D.S.O., R.A.F., Lieut.-Col. T. O'B. Hubbard, M.C., R.A.F., Lieut.-Col. J. T. C. Moore-Brabazon, M.P., Lieut.-Col. Alec Ogilvie, R.A.F., Mr. T. O. M. Sopwith and Mr. H. E. Perrin, Secretary.

Chairman.—Brig.-Gen. The Duke of Atholl, K.T., M.V.O., D.S.O., was unanimously elected Chairman for the current year.

Vice-Chairman.—Brig.-Gen. Sir Capel Holden, K.C.B., F.R.S., was unanimously elected Vice-Chairman for the current year.

Sub-Committees.—The following Sub-Committees were appointed:—

Flying Services Fund Committee:

Mr. Chester Fox.
Lieut.-Col. T. O'B. Hubbard, M.C., R.A.F.
Lieut.-Col. C. E. Maude, R.A.F.
Brig.-Gen. R. H. More, C.M.G.

Finance Committee:

Mr. Ernest C. Bucknall.
Mr. G. B. Cockburn.
Lieut.-Col. J. T. C. Moore-Brabazon, M.P.
Mr. J. H. Nicholson.
Lieut.-Col. Alec Ogilvie, R.A.F.
Mr. T. O. M. Sopwith.

House Committee:

Mr. Ernest C. Bucknall.
Capt. Ronald L. Charteris, R.A.F.
Surgeon Herbert J. Corin, R.N.V.R.
Mr. C. G. Greenhill.
Mr. Henry Knox.
Mr. J. Stewart Mallam.
Lieut. N. C. Neill, R.N.V.R.
Mr. J. H. Nicholson.
Capt. E. V. Sassoon, R.A.F.

"Daily Mail" £10,000 Trans-Atlantic Flight.—The following further entry for the *Daily Mail* £10,000 Trans-Atlantic Flight was reported:—

Handley Page, Ltd.

Fédération Aéronautique Internationale.—Resolutions passed by the Aero-Club de France regarding the Central Powers were discussed, and the delegates of the Club appointed to attend the inter-allied meeting of the Fédération Aéronautique Internationale in Paris on April 11, 1919, were instructed as to the views of the Committee.

Owing to the inability of Lieut.-Col. F. K. McClean to attend the Meeting in Paris, Lieut.-Col. Alec Ogilvie was appointed to take his place.

Entrance Fee and Subscription for New Members.

In accordance with the Resolution passed unanimously at the Annual General Meeting of the Royal Aero Club on March 31, 1919, the Subscription for Members elected on or after May 31, 1919, will be £7 7s. per annum and the Entrance Fee £5 5s.

"DAILY MAIL" £10,000 TRANS-ATLANTIC FLIGHT

The following is the list of entries for the *Daily Mail* £10,000 Trans-Atlantic Flight:—

Whitehead Aircraft (1917), Ltd.: Biplane; 1,600 h.p. Liberty engine. Pilot, Capt. A. Payze.

Capt. Hugo Sundstedt: Biplane; Liberty engines. Pilot, Capt. Hugo Sundstedt.

Sopwith Aviation Co., Ltd.: Biplane; 320 h.p. Rolls-Royce Eagle engine. Pilot, Mr. H. G. Hawker.

Short Bros.: Biplane; 350 h.p. Rolls-Royce Eagle 8 engine. Pilot, Maj. J. C. P. Wood.

Fairey Aviation Co., Ltd.: Biplane; 360 h.p. Rolls-Royce engine. Pilot, Mr. Sydney Pickles.

Martinsyde, Ltd.: Biplane; 285 h.p. Rolls-Royce Falcon engine. Pilot, Mr. F. P. Raynham.

Handley Page, Ltd.: Biplane; 4 350 h.p. Rolls-Royce Eagle 8 engines. Pilot, not yet nominated.

Offices: THE ROYAL AERO CLUB,

3, CLIFFORD STREET, LONDON, W. 1.

H. E. PERRIN, Secretary.

RULES OF THE AIR

THE following official *communiqué*, dated April 7, has been received from Paris:—

The fifth and sixth meetings of the Aeronautical Commission of the Peace Conference were held on April 4 and April 5.

The Commission received reports from the joint military, legal, commercial, and financial sub-committee, and decided to include the substance of these reports in a report to be made to the Supreme Council early in the following week. The Supreme Council had requested the Commission to report as early as possible upon any matters which might have relation to the conditions of the Preliminaries of Peace.

The Commission further considered and provisionally approved a report of the technical sub-committee. This report contained recommendations of that sub-committee as to the technical articles which are to be included in the International Convention, and as to the regulations to be contained in annexes to the Convention upon the following matters:—(a) Marking of aircraft; (b) certificates of airworthiness; (c) log-books; (d) rules as to signals, rules of the air, regulations for air traffic on and in vicinity of aerodromes.

With regard to the marking of aircraft, the sub-committee have recommended a system of marking by capital letters of which the first letter will represent the national mark of the country, and will be followed by a group of four capital letters, pronounceable, if possible, each group containing at least one vowel. A complete group of five letters is to be used as a call sign in making or receiving signals by wireless. In the case of aeroplanes the marks are to be painted once on the lower surface of the lower main planes and once on the upper surface of the top main planes, and also along each side of the fuselage. In the case of airships and balloons, the marks are to be painted on both sides. The height of the marks must be equal to four-fifths of the width of the wing in the case of aeroplanes, and in the case of airships at least one-twelfth of the circumference at the maximum diameter, but they need not exceed 2½ metres in height. They are to be painted or affixed in black on a white ground.

The main conditions governing certificates of airworthiness include approval of design, flying trials of the first of the type, approval of workmanship and materials, and equipment with suitable instruments.

The recommendations as to log-books contemplate four different kinds of log-books—viz., journey log, aircraft log, engine log, and a signal log. The first of these must be kept for all aircraft, and is to contain particulars of the crew and passengers and a description of the journey but need only be kept in the case of international flights. The last three are only obligatory in the case of commercial aircraft, and are to contain entries of a technical character, the aircraft and engine log including a record of the life of the aircraft and engine.

The rules as to lights are modelled to a certain extent upon similar rules in use at sea, and there are detailed rules as to signals in the case of aircraft wishing to land at night, and in the case of aircraft in distress. These include the use of Verry lights and certain visual or wireless signals.

The rules of the air follow the rules of the sea in many respects, especially in the case of the passing rule when two aircraft are meeting. In that case each must alter its course to starboard.

Regulations for air traffic on and in the vicinity of aerodromes contemplate the use of coloured flags indicating whether the circuit which an aircraft about to land may find it necessary to make should be clockwise or anti-clockwise. There is also a valuable provision for dividing every aerodrome into three zones when landing upwind. The right-hand zone is to be the taking-off zone and the left-hand zone the landing zone, and between the two there is to be a neutral zone into which, after its landing run, an aeroplane will immediately taxi.

In the general provisions at the conclusion of this code there is a rule providing for every aircraft which manoeuvres under its own power on the water conforming to the regulations for preventing collisions at sea.

HONOURS

It was announced in the *London Gazette* on April 5 that the King has been pleased to confer the following rewards on officers and other ranks of the Royal Air Force in recognition of gallantry in flying operations against the enemy:—

The Distinguished Service Order.

Capt. (A. Maj.) F. L. Robinson, M.C. (R. Innis. Fus.). (Mesopotamia).—A very gallant and able squadron commander, who, by his fine leadership and personal example, has raised high the moral of his command. By his untiring energy he has rendered most valuable service on reconnaissance duty and bombing raids. (M.C. gazetted Sept. 6, 1915.)

Bar to the D.F.C.

Capt. R. D. Simpson, D.F.C. (A.S.C.). (Mesopotamia).—An officer conspicuous for his gallantry and devotion to duty. He has rendered exceptionally valuable service when on contact patrol with cavalry, furnishing most important information. He has carried out numerous bombing raids at low altitudes under heavy hostile fire. (D.F.C. gazetted Jan. 1, 1919.)

Distinguished Flying Cross.

Lieut. J. L. W. Bacon (Ches. R.) (Mesopotamia).—During the last part of the operations this officer displayed marked gallantry and determination, never hesitating to descend to a low height to locate the position of our troops, frequently in face of severe hostile fire. On one occasion he carried out four bombing raids in one day on an objective 70 miles distant.

Lieut. (A. Capt.) E. M. Coles (France).—This officer has taken part in over 100 successful bombing raids, and has carried out most valuable photographic and reconnaissance work. He has also crashed two enemy aircraft. At all times he displays conspicuous gallantry and an utter disregard of danger.

Sec. Lieut. (Hon. Capt.) H. W. Deacon (R. Arty.) (Mesopotamia).—This officer has shown marked courage and devotion to duty in carrying out reconnaissances of our advanced positions and those of the enemy, often under heavy fire. His reports have invariably been most accurate and detailed, containing most valuable information.

Lieut. (A. Capt.) G. Jones (Australian F.C.) (France).—A most daring and gallant leader in aerial fighting, in which he has destroyed seven enemy aircraft. Capt. Jones has always displayed marked ability in all his duties.

Lieut. (A. Capt.) A. MacGregor (Arg. and Suth'd Highrs.) (France).—This officer has accounted for five enemy aircraft and has proved himself an exceptionally capable leader of patrols, notably on Aug. 14, when his formation of five machines was attacked by eight enemy aircraft. By his skillful leadership five of the latter were brought down without his own formation sustaining a single casualty.

Sec. Lieut. G. R. Moffoot (Murmansk) and Sec. Lieut. R. B. Gordon (Murmansk).—These officers displayed conspicuous gallantry in a recent bombing raid. While so engaged their engine was hit, and the machine eventually crashed. Climbing out, they removed the Lewis gun and set fire to the machine. Before they could make sure that the machine was fully alight they heard parties of the enemy approaching, and they escaped into the woods. After wandering about for two days they met a friendly hunter, who conducted them to our outposts. On reaching our lines these officers had to be admitted to hospital suffering from frost-bitten feet. A fine example of courage and determination.

Capt. (A. Maj.) F. S. Moller, M.C. (Murmansk).—A wing commander of outstanding merit, who, by his fine leadership, personal disregard of danger, and splendid example, has, since he took over the command of his wing (composed of one British and two Russian squadrons) worked marvels in raising its morale and efficiency. His personal influence was very marked on a recent occasion when, owing to heavy casualties, the morale of the pilots had suffered he took charge, and by his fine example and leadership restored confidence, and successfully reduced the enemy's artillery fire. (M.C. gazetted Nov. 14, 1916.)

Lieut. (A. Capt.) A. Newman, M.C. (4th Battn. Essex R., T.F.) (France).—A gallant and determined officer who has carried out over 100 most successful bombing raids, frequently in face of severe hostile fire. He has also destroyed two enemy aircraft and rendered valuable service on reconnaissance and photographic patrols. (M.C. gazetted June 3, 1916.)

Meritorious Service Medal

(For Services in Mesopotamia)

28007 Flight-Sgt. J. J. Chester (London, W.); 26231 Sgt. J. Noye (Whitstone, Devon); 16528 Sgt.-Clerk T. H. Tollfree (Putney, S.W.); 2835 Sgt.-Maj. W. Wood (Dukinfield, Cheshire).

FOREIGN DECORATIONS

The King has granted unrestricted permission for the wearing of the following decorations, conferred on the officers and other ranks indicated, for valuable services rendered in connection with the War:—

CONFERRED BY THE PRESIDENT OF THE FRENCH REPUBLIC
Croix D'Officier, Legion D'Honneur.

Col. (actg. Brig.-Genl.) L. E. O. Charlton, C.B., C.M.G., D.S.O. (Lanc. Fus.).

Croix De Chevalier, Legion D'Honneur

Maj. (actg. Lieut.-Col.) J. A. Cunningham, D.S.O., D.F.C. (R. Art.); Capt. (A. Maj.) H. W. M. Paul, O.B.E., M.C. (Middx. R.); Maj. J. P. C. Sewell; Lieut.-Col. G. E. Todd (Welsh R.).

Croix de Guerre.

Sec. Lieut. W. H. Bland (with Bronze Star); Sec. Lieut. (Hon. Lieut.) F. C. Butler, M.B.E. (with Silver Star); Sec. Lieut. W. S. Campbell (with Palme); Maj. H. V. C. de Crespigny, M.C., D.F.C. (with Bronze Star); Sec. Lieut. J. R. Chisman (with Bronze Star); Maj. (A. Lieut.-Col.) J. A. Cunningham, D.S.O., D.F.C. (with Palme) (R.A.); Lieut. the Hon. J. E. de G. Henniker-Major (with Silver Star); Lieut. (A. Capt.) F. E. John (with Silver Star); Capt. A. G. Jones-Williams, M.C. (with Palme); Sec. Lieut. J. G. Kershaw (with Bronze Star); Lieut. (A. Capt.) C. L. Morley, D.F.C. (with Bronze Star); Lieut. (A. Capt.) M. A. Newnham, D.F.C. (with Palme); Maj. E. W. Norton, D.S.C. (with Palme); Sec. Lieut. D. Oxley (with Bronze Star); Sec. Lieut. G. B. Pike (with Bronze Star); Sec. Lieut. H. G. Pope (with Bronze Star); Lieut. G. Richardson, 65th Wing (with Palme); Lieut. (A. Capt.) T. Roberts (with Silver Star); Sec. Lieut. (A. Capt.) R. Russell (with Silver Star); Capt. R. R. L. Thom (with Silver Star); Lieut. (A. Capt.) O. L. Vetter (with Silver Star); Lieut. (A. Capt.) J. L. M. White, D.F.C. (with Bronze Star); 113209 Sgt.-Mech. P. Hoolihan, 108th Squadron (with Bronze Star); 11940 Sgt.-Mech. E. E. Yardy, 38th Squadron (with Bronze Star).

CONFERRED BY THE KING OF ITALY.

Cavaliere of the Order of St. Maurice and St. Lazarus

Maj. (actg. Lieut.-Col.) R. D. W. Waterhouse

Officer of the Order of the Crown of Italy

Maj. (actg. Lieut.-Col.) E. R. Peal, O.B.E., D.S.O.

Cavaliere, Order of the Crown of Italy.

Capt. (actg. Maj.) A. W. Crombie.

The Croce di Guerra

(Awarded for Services Rendered in the Mediterranean Area)

Capt. S. E. Ball, D.F.C.; Lieut. D. R. B. Bentley; Capt. (A. Maj.) H. J. T. Berryman, Lieut. L. de V. Crisman, Lieut. C. Chrimes, Sec. Lieut. E. R. Hiscocks, Lieut. S. K. F. P. Humphrey, Lieut. (A. Capt.) B. G. H. Keymer, D.F.C., Lieut.-Col. (A. Col.) A. M. Longmore, D.S.O., Sec. Lieut. J. A. Munn, Lieut.-Col. D. A. Oliver, D.S.O., Lieut.-Col. R. E. C. Peirse, D.S.O., A.F.C., Sec. Lieut. H. Randle, Lieut. E. G. Spooner, Capt. R. J. F. Sullivan, Lieut. G. I. Thorman, Lieut. F. Wood (225 Squadron, Adriatic).
No. 208273 Sgt. K. E. Dawson, No. 210629 A.-Mech. 1 F. R. Heckford.

Bronze Medal for Military Valour.

Lieut. B. T. Anderson, Lieut. E. L. Bragg, Capt. E. P. Hardman, D.F.C., Lieut. A. L. Huether, Capt. (A. Maj.) R. F. S. Leslie, D.S.C., D.F.C., Lieut. P. E. Lindner, Capt. (A. Maj.) J. S. F. Morrison, D.F.C., Lieut. G. Raney, Lieut. C. S. Sivil, Lieut. S. C. Strafford, D.F.C., 222466 Capt. F. T. Wallace, D.F.M. (Canning Town, E.).

CONFERRED BY THE KING OF THE BELGIANS.

Order de la Couronne, Commandeur

Col. (A. Maj.-Genl.) C. L. Lambe, C.M.G., D.S.O.

Croix de Guerre (Belgian)

Lieut. (A. Capt.) N. L. Garstin, 102 Sqdn.; Lieut. S. W. Mountain, 16 Balloon Section.

CONFERRED BY THE KING OF THE HELLENES.

Grand Commandeur de L'Ordre de St. Saviour

Maj.-Genl. W. G. H. Salmond, C.B., D.S.O. (R.A.); Lieut.-Col. (actg. Brig.-Genl.) P. L. W. Herbert, C.M.G. (N. and D.R.).

Officier de L'Ordre de St. Saviour.

Lieut.-Col. C. Bovill (R.A.); Lieut.-Col. C. Fraser, O.B.E., M.C. (N. Staffs.).

Chevalier de L'Ordre de St. Saviour.

Lieut. (actg. Capt.) J. J. Williamson, A.F.C.

Officier de L'Ordre de Georges 1er.

Maj. K. R. Binning, M.C.; Capt. (actg. Maj.) C. C. Treatt (N. Lancs. R.); Maj. A. C. Wright.

Chevalier de L'Ordre de Georges 1er

Sec. Lieut. H. Hudson.

CONFERRED BY THE KING OF SERBIA

The Order of the White Eagle, 4th Class, with Swords

Lieut.-Col. G. E. Todd, 16th Wing (Welsh R.).

War Office, April 5, 1919

The King has approved of the award of the Military Medal for bravery in the field to the following Air Mechanic:—

No. 12480 1st A.-Mech. J. P. Glasscock, R.A. Force (Croydon), formerly attached Headquarters 77th Brigade, R.F.A., France.



The Queensland Aerial Survey

THE Australian aerial survey party report having sited some good landing places in Queensland. They experienced some exciting adventures while crossing the wild country in the vicinity of the Gulf of Carpentaria.

Certificates for "Mentions"

It is announced that the Air Council, as well as the Admiralty and the Army Council, have decided to issue a certificate to all personnel whose names appear in List of Mentions published in the *London Gazette* for services rendered in war areas.

The preparation and issue of these certificates will necessarily occupy a considerable time, and they will be dispatched in due course to all who are entitled to receive them. Meanwhile no application by individuals is desired or necessary.

Outfit Allowances for R.A.F. Cadets

AN Air Ministry Order (No. 409) states that cadets and flight cadets (including those already demobilised) will be granted, on application, certain outfit allowances. Full particulars of the allowances are given in Form F.S. 751, copies of which can be obtained on application to the Clerk-in-Charge, Air Ministry Publications Depot, 45, Belvedere Road, S.E.

Distribution of Technical Publications

TECHNICAL publications which have hitherto been distributed by the Department of Aircraft Production (T.5) will in future be stocked and issued by the Air Ministry Publications Depot. For the present the work will continue to be carried out at South Kensington, and requisitions and correspondence should be addressed as follows:—The Officer in Charge, Air Ministry Publications Depot (Technical), 70, Princes Gate, Exhibition Road, S.W. 7.

THE TRANSATLANTIC RACE

THE preparations for the great race to be first to cross the Atlantic by air are progressing apace. By way of summary, the Sopwith machine, to be piloted by Mr. H. Hawker, who will have with him as navigator and assistant pilot Capt. Grieve, is already at the starting point in Newfoundland, and is only awaiting favourable weather conditions before making a start. The Martinsyde biplane, with its pilot, Mr. F. P. Raynham, and his navigator, Capt. Morgan, is on its way across, and may, by the time these lines appear in print, have arrived at St. John's. The Fairey machine,

element of luck involved, but arrangements, as announced elsewhere, are being made, by the Air Ministry and Admiralty, to take all possible precautions, and to ensure that, even in cases of engine failure, the occupants should have a very good chance of being picked up by passing vessels.

THE MACHINES

As interest centres more and more in this race, a few words dealing with the British machines entered will, we feel sure, be welcomed by readers of *FLIGHT*.

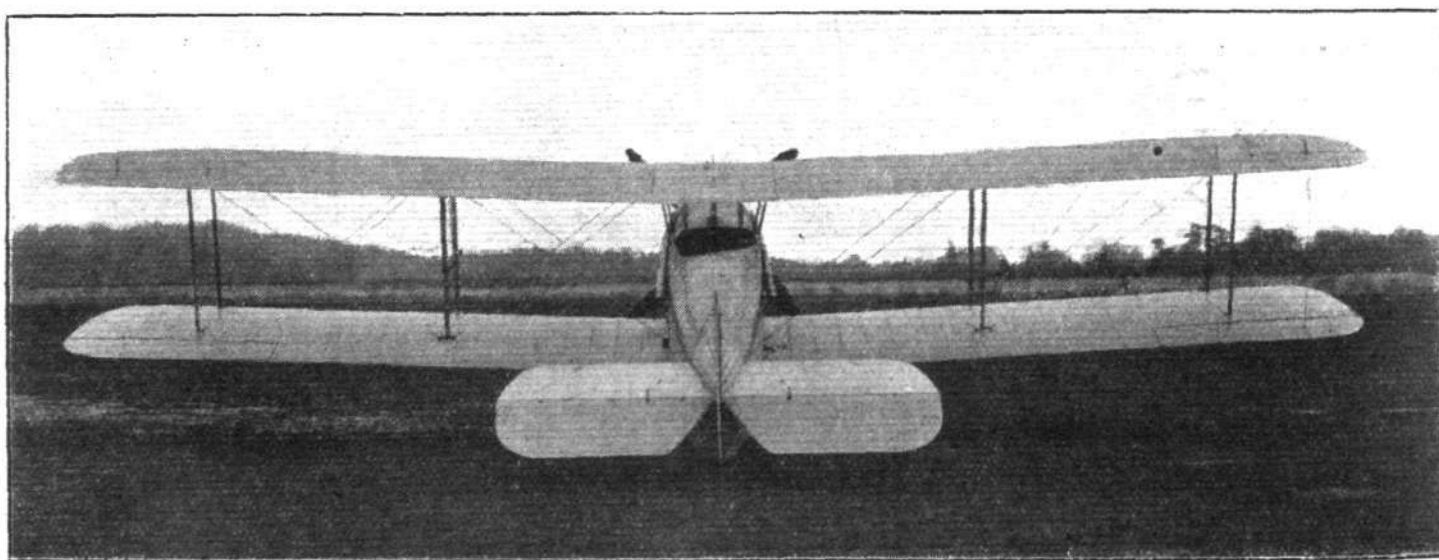


THE TRANSATLANTIC ATTEMPT.—Three-quarter front view of the Rolls-Royce engined Sopwith transport type of machine which has been specially designed for this flight.

up till now the only seaplane entered from this side, is rapidly nearing completion, being, in fact, a standard Fairey 3C type especially adapted for the race. The pilot, as already announced, will be Mr. Sydney Pickles, so well known to all readers of *FLIGHT*. The name of the navigator who will accompany him has not yet been disclosed, but will, we understand, be announced shortly. The Short machine entered, and which will be piloted by Major Wood, who will have with him as navigator Capt. Wylie, has the distinction

The Sopwith Machine

The Rolls-Royce engined Sopwith transport type specially designed for an attempt to win the *Daily Mail* Prize for crossing the Atlantic, is of the vertical biplane type, the wings having no stagger. Pilot and navigator are seated well aft, so as to give a large space in the fuselage between them and the engine, in which to fit the large petrol tank required for the great amount of fuel that has to be carried for a flight of this duration. This tank has a capacity of 330 gallons,

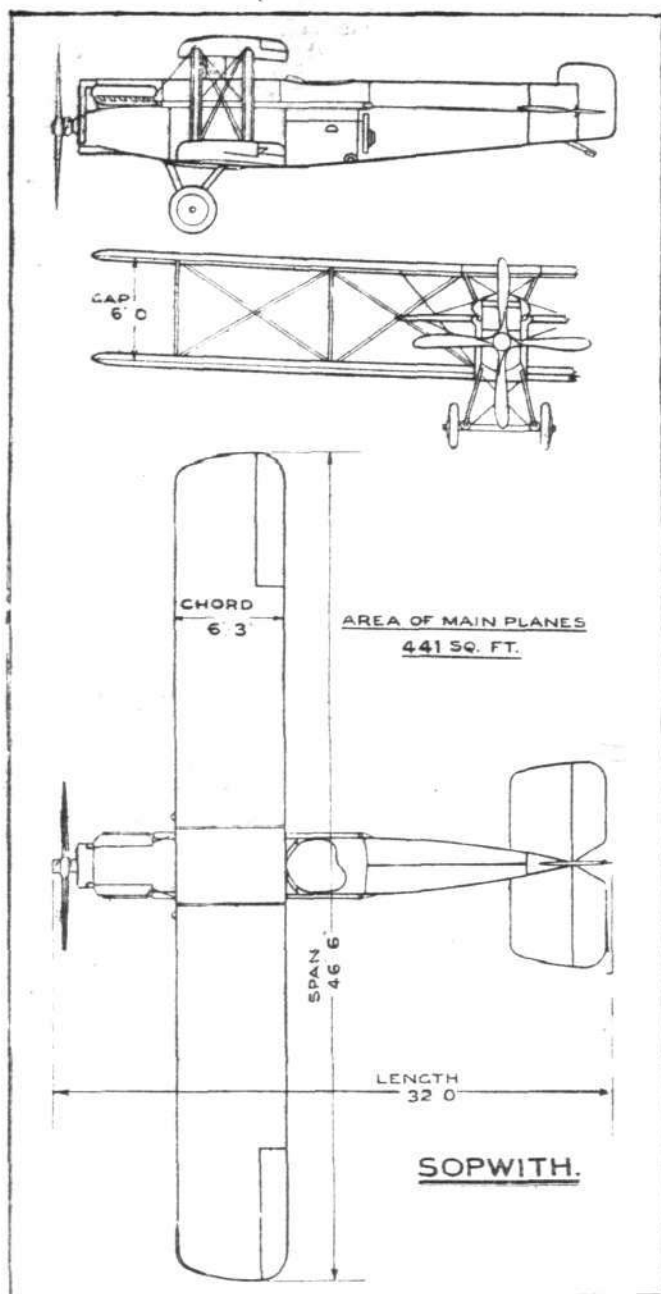


THE TRANSATLANTIC ATTEMPT.—Rear view of the Sopwith machine.

of being the only entrant which, so far, it is proposed to start from this side, the starting point chosen being Bawnmore, near Limerick, in Ireland. This machine, which has been undergoing severe tests during the last couple of weeks, is to be flown first to Ireland, whence the final start will be made.

As to the probability of one or all of the competitors succeeding in getting across, there is of course, a certain

while the oil tank contains 24 gallons, and the water reservoir 17 gallons. The weight of the machine empty is 3,000 lbs., and fully loaded she weighs 6,150 lbs. The accompanying general arrangement drawings will give a good idea of the dimensions of the machine. The engine fitted is a Rolls-Royce "Eagle," of 375 h.p., which will give the machine a maximum speed of 118 m.p.h. This speed will not, of course, be maintained all the way, the most economical speed from the



General arrangement drawings of the Sopwith Trans-Atlantic machine.

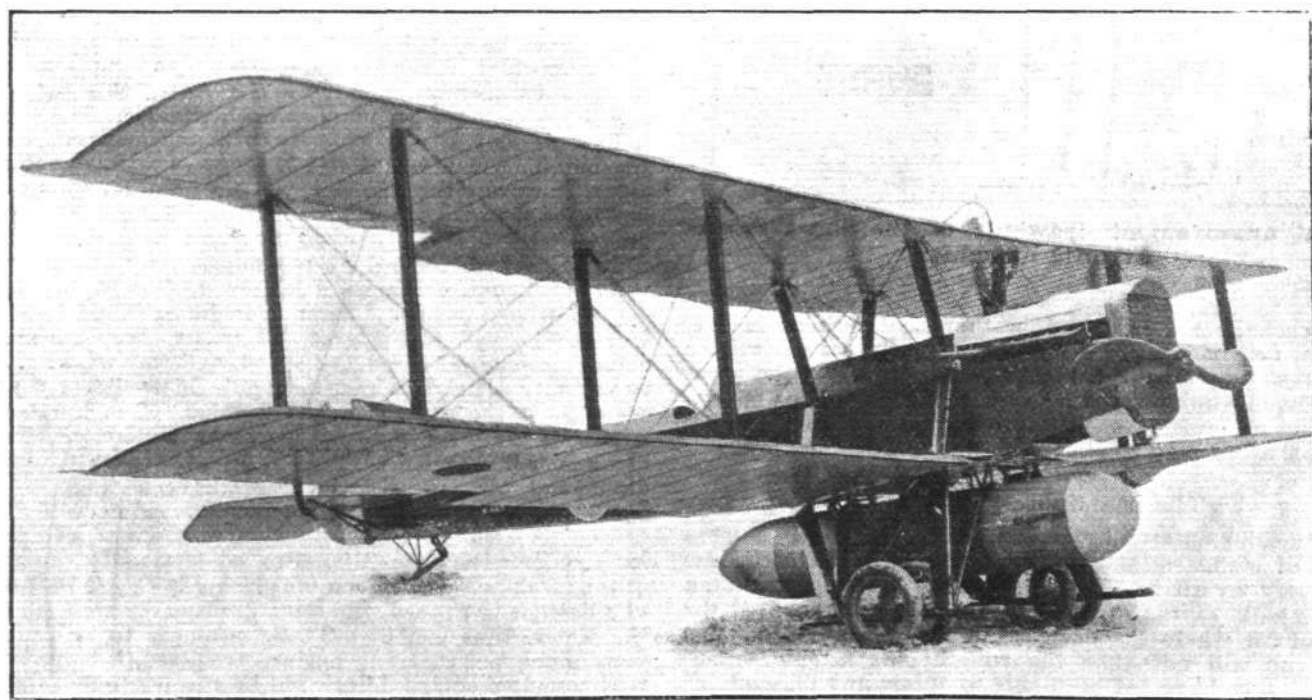
point of fuel consumption lying somewhere between the maximum and the minimum speed, and varying with the lightening in load as the fuel is consumed.

The cockpit of the occupants is arranged in a somewhat unusual way, the two seats being side by side, but somewhat staggered in relation to one another. The object of this seating arrangement is to enable them to communicate with one another more readily and to facilitate "changing watches" during the long journey. The very deep turtle back of the fuselage is made in part detachable, the portion which is strapped on being built so as to form a small life boat in case of a forced descent on the sea. In this manner it is hoped to provide sufficient flotation for the occupants to remain afloat until a passing vessel may pick them up, should a descent be necessary. As the machine is not fitted with floats, it would, of course, be out of the question to get her off again once she was in the water. In other respects the machine does not differ greatly from standard Sopwith practice, which is already well known to readers of *FLIGHT*. The two photographs and the general arrangement drawings should give a very good idea of the general appearance of the machine.

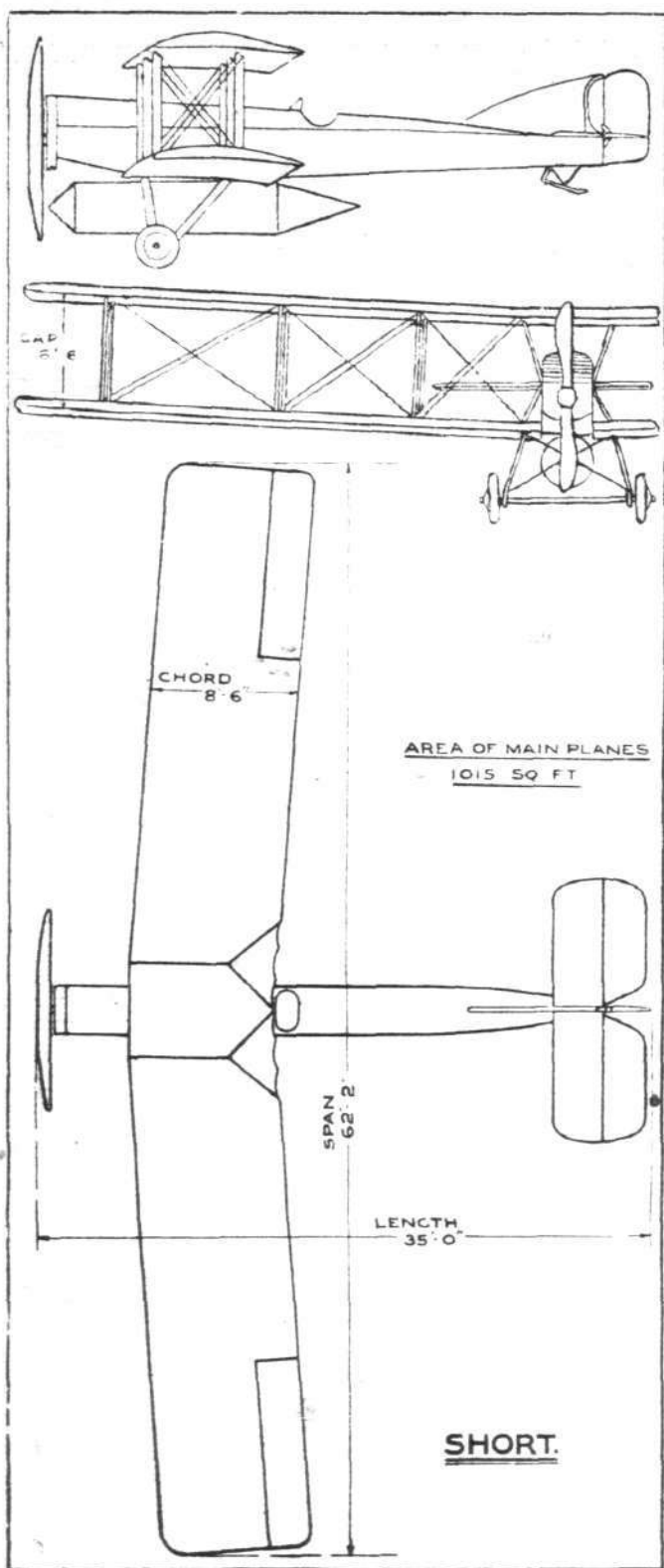
The Short Machine

Fundamentally the Short machine entered for the race does not differ greatly from their standard torpedo carrier known as the "Shirl." It is, as will be seen from the general arrangement drawings, a land machine fitted with wheels. In the place between the chassis struts usually occupied by the torpedo in the standard "Shirl" is slung a large cylindrical petrol tank which, should the necessity arise, can be quickly emptied so as to form a float of sufficient buoyancy to keep the machine afloat for a considerable period. In order to be able to carry the extra weight of fuel necessary for the long journey larger wings have been fitted, having three pairs of struts on each side instead of the two pairs fitted on the standard machine. A feature which is unique for this machine is the sweepback of the planes, which is very pronounced. This should form a very good feature by which to identify the Short machine, although from the fact that up to the present she is the only machine entered on which the westward flight will be attempted, she can scarcely be confused with any of the other entrants.

As in the case of the Sopwith machine, the Short is fitted with a Rolls-Royce "Eagle," and the petrol capacity is, we understand, sufficient for a flight of 3,200 miles; in still air, of course. As the distance across is a little under 2,000 miles, this leaves a fair margin for adverse weather conditions, the prevailing winds in this part of the Atlantic being westerly at this time of the year. It will, therefore, be seen that the decision to make the westward flight may not be so dangerous as many are apt to imagine, and certainly considerable time will be saved by avoiding the delay of shipping the machine across before a start can be made.



THE TRANSATLANTIC ATTEMPT.—Three-quarter front view of the Short "Shirl." The machine with which this firm will make the attempt is very similar to the "Shirl," but differs in various details. For instance, the wings will be of greater area than those shown in the photograph. The engine is a Rolls-Royce "Eagle."



General arrangement drawings of the Short Trans-Atlantic machine.

The cockpits are arranged in the usual fashion in this machine, i.e., in tandem. A directional wireless set will be fitted as well as all the navigation instruments of the usual type. The maximum speed is expected to be about 95 m.p.h., but flying at cruising speed, and allowing for head winds, the actual speed may be expected to be considerably lower.

The Martinsyde Machine

The machine entered by Messrs. Martinsyde, Ltd., is more or less of standard Martinsyde type, with the occupants placed very far aft to allow of mounting a large petrol tank in the middle of the fuselage, in the neighbourhood of the centre of lift where the decrease in fuel weight as the fuel is used up will not alter the trim of the machine. Unfortunately we have not been able to obtain any illustrations of the Martinsyde machine, but in outward appearance it does not present any radical departures from the standard. It has the distinction of being the lowest powered machine in the race, the engine being a Rolls-Royce "Falcon" of

285 h.p. As the Martinsyde machines have always been known for their great efficiency, this is an advantage inasmuch as less fuel will have to be carried, and in spite of the lower power the speed is over 100 m.p.h. A military Martinsyde machine with the same engine is the holder of speed records for machines of this type, and it may safely be assumed that the trans-Atlantic type is not inferior in any way to the standard type.

The Fairey Machine

As already pointed out, the machine entered by the Fairey Aviation Co. has the distinction of being the only seaplane entered. It is of more or less standard type, resembling the well-known type 3C Fairey seaplane. The most remarkable feature of this machine is, of course, the variable camber wings fitted. This forms a Fairey patent, and has been used with good results on machines employed by the Navy. Briefly speaking, the variable camber is obtained by having the entire trailing edge of the planes hinged along the rear spars in such a manner that the pilot can, by turning a wheel, pull down the whole trailing edge to give greater lift, and again raise it to provide less resistance and hence greater speed. In the ordinary way the chief aim of this variable camber is to provide a low speed on alighting and getting off, but for the Atlantic flight it will also be found useful in providing greater lift while the machine is heavily loaded, allowing of gradually flattening out the wing section as the load becomes less owing to the fuel being consumed. In this manner the first part of the flight will probably be made at a slower speed than that obtained towards the finish of the journey. The engine is, as in two of the other machines entered, a Rolls-Royce "Eagle" of 375 h.p., and the speed of the machine is stated to be about 120 m.p.h. This figure probably refers to the speed with the trailing edge in line with the rest of the wing section. With the trailing edge pulled down the speed will be considerably lower.

The Whitehead Machine

We have not, for the moment, been able to obtain any particulars of the machine the Whitehead firm propose to use, and can only wait until Mr. Whitehead is prepared to disclose the type with which they may make a bid for the prize.

The Handley-Page Machine

Just as we are going to press, news is received that Mr. Handley-Page has entered a machine for the race. The machine is one of the standard type four-engined bombers, slightly altered in details, and fitted with a very large petrol tank in the fuselage. As readers of FLIGHT will already be aware, the four engines—in this case Rolls-Royce "Eagles"—are placed between the planes, one behind the other. The front engine of each pair drives a tractor screw, while the engine behind it drives a propeller. As the pusher screw has to deal with air already set in motion by the tractor, its pitch is made slightly greater than that of the tractor.

The amount of petrol carried will be about 2,000 gallons. Assuming that each engine develops 365 h.p., and that the petrol consumption is .5 lb./h.p./hour, this amount of fuel should last for 21 hours at open throttle. The speed at full power may be expected to be in the neighbourhood of 100 m.p.h., which would give a range of about 2,100 miles. Since, however, the machine will fly at a somewhat lower power for the sake of fuel economy, and the prevailing winds are westerly at this time of the year, it is reasonable to suppose that this speed of 100 m.p.h. may be maintained with the engines partly throttled down, thus further increasing the margin in hand. After a few hours' flight two of the four engines will probably be sufficient to keep the machine going, although at a reduced speed, and this would give the engineers a chance to put right any little defect that one or more of the engines might develop. The number and names of the crew have not yet been announced, but one of them will be a Marconi operator, who will attend to the directional wireless set, which will have a range of about 250 miles. An installation of smaller radius will also be carried to facilitate communication with ships. To provide for emergencies, a small wireless set is installed in the tail of the machine. The reason for placing it here is that in case of a descent in the sea, the tail will probably stick up out of the water, thus enabling S.O.S. messages to be sent. In view of the fact that four engines are fitted, it is improbable that complete engine failure will be encountered.

The following brief particulars of the Handley-Page machine should be of interest:—

"Span, 130 ft.; length, 75 ft.; height, 23 ft.; weight, empty, 14,000 lbs.; weight, fully loaded, 32,000 lbs.

THE following has been issued by the Air Ministry:— Within the next few weeks, perhaps within the next few days, an effort will be made to cross the Atlantic by aircraft. The accomplishment of this feat will mark a new and historic advance in the development of aviation. Longer flights have already taken place by lighter-than-air-craft, but these were mainly over land routes. The attempt to fly the Atlantic, involving an oversea passage of over 1,900 statute miles, is a much more serious and difficult feat than is a similar trip over an all land route.

The Air Ministry, recognising the difficulties to be overcome, and the importance of securing successful flights by British machines, have placed their information, knowledge and resources at the disposal of the aircraft firms and the pilots who have decided to attempt the flight for the *Daily Mail* £10,000 prize.

List of Entries.

The list of entries for the flight as given by the Royal Aero Club is as follows:—

Machines.	H.P.	Speed.	Pilot.
Martinsyde ..	285	100	Mr. F. Raynham.
Fairey ..	375	120	Mr. S. Pickles.
Short ..	350	95	Major J. C. P. Wood.
Sopwith ..	350	100	Mr. H. G. Hawker.
Whitehead ..	1,600	115	Capt. A. Payzo.
*Seaplane ..	440	—	Capt. H. Sundstedt.

*This machine is reported to have been damaged, but the entry has not been withdrawn.

The first five of these machines are of British design and manufacture. Most of them are types which have rendered good service during the war, and it would be but fitting that one or all of them should accomplish this new record in a more peaceful field. These machines will not start together, and it lies with each pilot to set out on his venturesome journey on his responsibility as soon as his own plans are completed.

The arrangements for carrying out the flight are necessarily prolonged and arduous. Some firms desiring to compete were without machines owing to their whole output being under contract to the Government, and the Air Ministry has released machines where necessary. Other firms were without the necessary engines, instruments, wireless telegraph apparatus, etc., and the same facilities have been afforded to secure these.

Owing to meteorological considerations it has been generally decided to start from the American side of the Atlantic, and the Ministry has endeavoured to secure shipping priority both for machines and pilots in order to facilitate the arrangements for making a start at the earliest possible moment.

An aerodrome has been under construction by the Air Ministry in Newfoundland, and has been cleared sufficiently for the use of machines as a starting base. The competing firms, however, must make their own arrangements for sheds and accommodation for *personnel*.

An R.A.F. officer has been placed at the disposal of the Royal Aero Club to act as official starter, and he will also be responsible for placing identification marks on the machines.

The moon will be full on April 15, and it is probable that the first attempt will be made by Mr. H. G. Hawker, flying the Sopwith machine, on or about this date. He is expected to start about 2 a.m. Newfoundland time (about 6 a.m. British time). He would thus fly through the night, and if his venture succeeds should arrive between 4 and 5 o'clock the following afternoon. (The approximate starting dates of the other competitors is not yet known.)

The navigator's duties in a flight of this length are extremely important, and much will depend on his calculations.

It may, therefore, be of interest to detail some of the apparatus which the navigator will use for attaining the successful accomplishment of the flight. A good compass is essential, and also a drift bearing plate, a course and distance calculator, a chronometer watch, a sextant, a navigating machine, and a protractor.

With these instruments at his disposal and with the meteorological information and directional wireless available to him, the navigator should be able to keep a correct course for the British Isles.

Three methods of navigation can be used:—

Direction finding by wireless telegraphy.

Astronomical observations.

Dead reckoning.

The first method consists of flying on a bearing of a known wireless station, the wireless apparatus where carried being designed to enable bearings to be taken on the Marconi Transatlantic station at Clifden in Ireland or Glace Bay in Nova Scotia. The bearing will not give the pilot his distance from the station, and is, therefore, only useful for showing whether he is keeping his approximate course. As this method

of navigation is inadequate owing to the lack of wireless stations to the north and south of the course across the Atlantic the second method may have to be used in conjunction with it. An observation by sextant of sun or stars taken from time to time renders it possible for the navigator to fix his position within about 20 miles. Again, there may be a space towards the centre of the flight in which the machine will be out of wireless range from either side, and here observations by sextant may have to be depended upon. The third method—dead reckoning—is used in conjunction with direction finding by wireless and astronomical observations. It consists of calculating the position of the machine from time to time according to its airspeed, and the estimated force and direction of the wind.

On this flight further assistance may be obtained by the navigator by means of wireless communication with passing ships which may be able to give him their position. With this end in view ships have been asked to assist in every possible way, and the Marconi Company are also instructing their ship operators to render every assistance. Ships which hear aircraft during the night have been asked to fire lights to attract the airmen's attention. Should a vessel, however, sight an aeroplane and receive no wireless signals she will send her position by wireless three or four times in case the aeroplane's transmitter may have broken down.

An aeroplane in distress will fire a series of white Verry lights at short intervals or will send an S.O.S. call. Ships have been warned that if such signals are observed or received or if an aircraft is seen to be in difficulties every endeavour should be made to go to the rescue.

During April the prevailing winds over the greater part of the Northern Atlantic are westerly, and have a surface velocity of 15 to 20 miles an hour. On the north of the direct line between Ireland and Florida from 10 to 20 per cent. of the prevailing winds are of gale force. South-east of Newfoundland is a region where fog is prevalent on 40 per cent. to 45 per cent. of this month; east of this region there is a gradual decrease of fog, until in mid-ocean south of latitude 40 deg. north it is rare.

During this flight, therefore, the winds may be of great assistance if the start is carefully timed. To assist in this, and in order that the fullest possible information may be available, arrangements are being made for frequent weather reports to be furnished by day and by night to the competitors both before starting and also during the flight. These reports are being obtained by the Air Ministry from the United States Weather Bureau, the Canadian Meteorological Office, Newfoundland, home stations, and ships along the route, and efforts are also being made to secure regular weather information from the meteorological stations at the Azores and Lisbon. The Air Ministry Meteorological Staff will forward special reports based on the information obtained from these sources to the R.A.F. Meteorological Officer at Newfoundland and the United States Weather Bureau, which will keep in close touch with the competitors before the start, and will forward all weather information to them as soon as it is received.

Competitors starting from this side will receive weather forecasts direct from the Air Ministry.

As the competitors' machines are fitted with wireless apparatus for short-wave messages only it is impossible to communicate forecasts or warnings direct from land stations during the flight, and the method of transmission must, therefore, be *via* ships along the route. The necessary arrangements have been completed for forwarding this information *via* land stations to shipping, which will communicate it to the competitors. These vessels will also report surface weather conditions in their own neighbourhood when they are able to get into touch with passing aircraft.

The Marconi Company is helping in collecting and transmitting this information from land stations and ships free of charge during the competition.

For the convenience of competitors who may desire to land in Ireland, the Air Ministry has arranged for an R.A.F. aerodrome at Fermoy, County Galway.

The Admiralty Notice

The following is the text of the notice issued by the Admiralty to mariners:—

North Atlantic route.

Instructions to vessels with regard to aircraft.

The following instructions, which are promulgated with a view to assisting aircraft attempting Transatlantic flights when out of sight of land, should be observed by all vessels employed on the North Atlantic route until further notice:—

(1) Should a vessel receive a request from aircraft for her position the reply should be sent at a Morse speed of not greater than 12 words per minute.

(2) Should a vessel sight an aircraft and no wireless signals be received from it, the vessel should transmit her position by wireless three or four times, without waiting to be requested to do so, as the aircraft wireless transmitter may have broken down. The position is to be transmitted in words and not in figures, thus—latitude fifty thirty, longitude thirty twenty.

(3) British commercial aircraft on Transatlantic flights will, for the present, use call signs of three letters (D K A to D M Z). The usual international procedure should be employed for inter-communications.

(4) Should an "S.O.S." call from aircraft be received, or aircraft be seen in difficulties, every endeavour possible should be made to rescue the occupants.

(5) Great assistance will be given to aircraft in sighting ships at night if ships on hearing aircraft overhead will fire any form of pyrotechnic lights to attract attention. This will, if possible, be replied to by the aircraft firing one coloured Vercy light or on her wireless.

(6) An aircraft in distress will fire a series of white Vercy lights at short intervals. Any ship in the vicinity should then indicate her presence and endeavour to rescue the occupants.

NOTE.—Aircraft attempting Transatlantic flight will be equipped with wireless telegraph apparatus capable of transmitting and receiving on a 600 metre wave (spark).



Married

Major GORDON VERO, R.A.F. (late Rifle Brigade), younger son of the late FRANCIS CAREY, of Burgess Hill, Sussex, and Mrs. Carey, of 85, St. Mark's Road, W. 10, was married on April 1, at Christ Church, Crouch End, to EILA, only daughter of Mr. and Mrs. G. W. REYNOLDS, of Upcote, Shepherd's Hill, Highgate.

Major MAURICE WRIGHT, R.A.F., elder son of Mr. and Mrs. Arthur Wright, of 3, Addison Road, Kensington, was married on April 5, at Christ Church, Woburn Square, to WINFRED MAY, younger daughter of the late CHARLES HOLFORD COWLES, of Southport, and of Mrs. W. R. Waller, of "Lugano," Buckhurst Hill.

To be Married

The engagement is announced between WALTER MORSE CLAPPERTON (late Lieut. R.A.F.), of Toronto, Canada, and ELLEN MURIEL MILLS, third daughter of the late Mr. and Mrs. W. G. Mills, of Torfey, Par, Cornwall.

The engagement is announced between Lieut. ROLAND VIVIAN CULLINAN, R.A.F., second son of Sir T. M. Cullinan, D.S.O., and of Lady Cullinan, of Johannesburg, and SYLVIA KATHLEEN, youngest daughter of Mr. and Mrs. FRANK LEAVER, of Lisnamoe, Cheltenham.

The engagement is announced between Capt. H. R. EYCOTT-MARTIN, R.E., R.A.F., elder son of Mr. Eycott-Martin, late C.S. of British Bechuanaland, and Mrs. Eycott-Martin, of Lindfield, Sussex, and MURIEL, only daughter of Mr. and Mrs. F. H. HORNER, of Putney.

The engagement is announced between Major W. H. S. GARNETT, R.A.F., only son of the late Mr. Frank Garnett and Mrs. Garnett, of Wood End, Wickham, and ENID, widow of Lieut. C. R. DAWKINS, B.A., LL.B., 9th Welsh Regiment, of The Bungalow, Haverfordwest.

The engagement is announced between Capt. ROBERT GRAHAM KITSON, R.A.F., son of the late Rev. John Francis Kitson, vicar of Antony, and Mrs. Kitson, Elbridge, Brixton, near Plymouth, and MABEL ELIZABETH SACKVILLE, second daughter of the Rev. G. E. F. Molineux, vicar of Colyton, Devon.

The marriage arranged between Mr. HAROLD LOFTUS TOTTENHAM (late Rifle Brigade and R.A.F.) and Miss VERONICA BOWEN PERKINS will take place on Wednesday, April 30, at St. Mary's Church, Cowbridge, Glamorganshire, at 2 p.m.

Items

Maj.-Gen. Sir HUGH TRENCHARD, Chief of the Air Staff, has now recovered sufficiently to enable him to go to the country, where he is recuperating.

Major-Gen. SEELY, Under-Secretary of State for Air, will be the guest at a luncheon arranged by the Overseas Club and Patriotic League on May 7.

Any information regarding Lieut. HAROLD BARTLETT BRADLEY, No. 1 Squadron, R.A.F., who has been missing since June 25, will be gratefully received by his mother, Mrs. Carrington Heming, 57, Union Street, Mountcalm, New Jersey, U.S.A.

Pilot-Lieut. C. H. WOODS and Observer-Lieut. McLEAN were reported missing on September 21, 1917. They were flying a Bristol fighter, No. 7,234, and were last seen to land near Menin. Anybody who can give further particulars is requested to write to Lieut. Lloyd M. Archibald, R.A.F., 87, Woodlawn Avenue, W., Toronto, Ont., Canada.

The will of Capt. BENTFIELD CHARLES HUCKS, R.A.F., of Piccadilly, W., the first British airman to loop the loop and to fly upside-down, who died from pneumonia, aged 34 years, has been proved at £9,236.

King Albert Flies to Brussels

RETURNING on April 5 from Paris, where he has been in consultation with various authorities, King Albert of Belgium flew to Brussels on a German LVG biplane piloted by Crombez. The royal aeroplane was escorted by two other military machines.

French Passenger Height Records

ON April 1 the Henri Farman Goliath piloted by Lieut. Bossoutrot set up a new record passenger height by taking up four passengers to a height of 6,200 metres. The passengers were pilot Muller and mechanics Mathe, Ferron and Mulet. The previous record for pilot and four passengers—made by Poiree in 1916, was thus beaten by more than 2,000 metres.

Two days later at Toussus-le-Noble this record was completely put in the shade by Lieut. Bossoutrot taking up 13 passengers to a height of over 6,000 metres, at which point the barograph ceased to act. The passengers were MM. Mathe, Scheuter, Blanloeil, Pani, Thierry, Thenasse, Verdillon, Bourgne, Foure, Male, Genolin, Redon and Mallet. During its flight the machine flew over Toussus, Versailles, le Bourget

and Paris, and was in the air for one hour forty-five and a half minutes.

British Entry for French Competition

At least one British entry has been made for the long-distance utility competition which is being organised in France, the British Aerial Transport Co. having entered, through M. Pierre Maréchal, one of the B.A.T. commercial machines. It may be recalled that the competition will consist of a flight round France in stages, aggregating 2,500 miles, and the prizes will be awarded according to the showing of the machine under the headings of safety, comfort, lifting power, speed, ratio of weight to speed and cost per ton mile.

Flight over the Andes

A MESSAGE from Santiago de Chile, dated April 5, states that Lieut. Cortinez, on one of the Bristol aeroplanes presented to the Chilean Air Service by the British Government, had flown over the Andes at a height of 6,000 metres (19,600 ft.). Last December Lieut. Godoy, also on a Bristol, flew across the Andes from the Chilean capital to Mendoza, in Argentina, in one and a-half hours.



AIRISMS FROM THE FOUR WINDS.

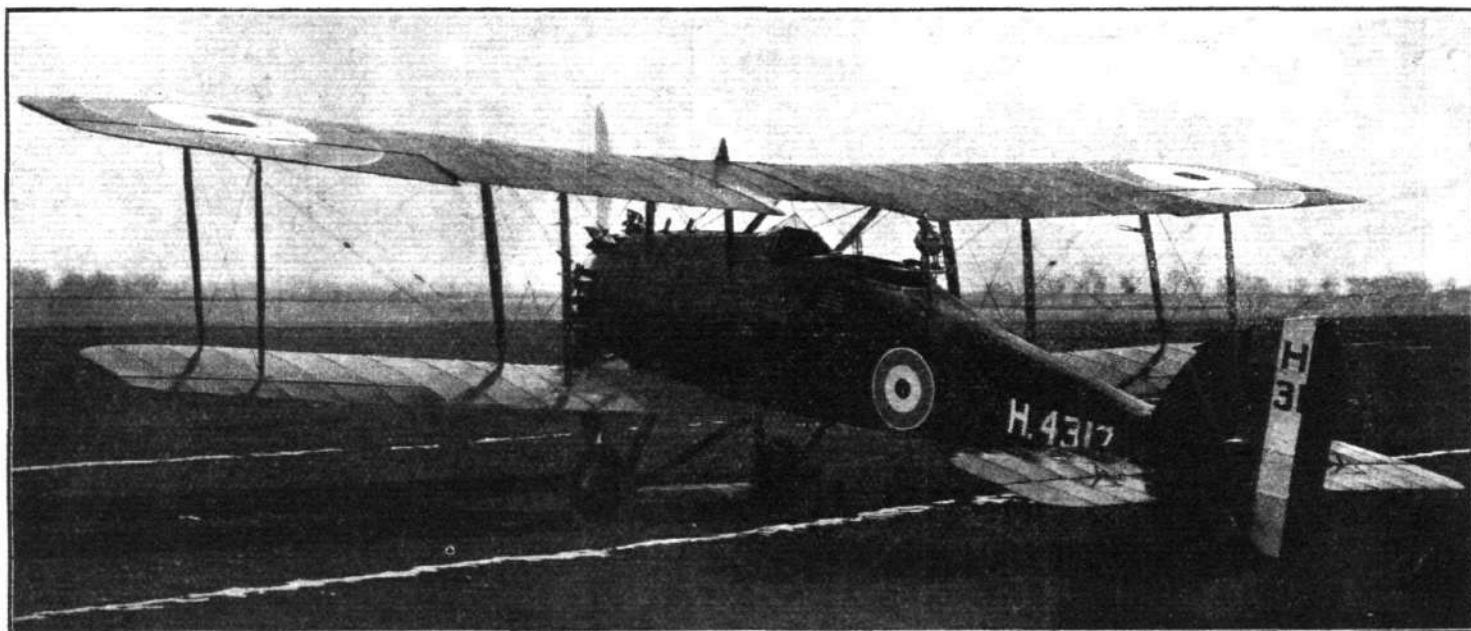
NEW YORK will soon be getting quite a breezy city in which to reside. According to a report from over there, the Aero Club of America announces that Capt. d'Annunzio, aeronautic engineer, son of the famous Italian poet-aviator, is engaged in manufacturing aeroplanes with a wing spread of less than 20 ft., the idea being that they shall be able to land in the streets. As the price *complet* is to be about £240, the game of dodging air-hogs should, indeed, soon be a merry one. Several orders have, it is announced, already been placed by Club members for these whirlabouts, which carry with them a guarantee to fly—we almost wrote last—for two and a half hours.

In the meantime, the chance for a little practice in dodging as above appears to be in being, under the care of a Miss Molly Pearson, described as an English star actress. This sports-woman is stated to be distributing coins over New York from a Curtiss machine, by way of advertisement for her

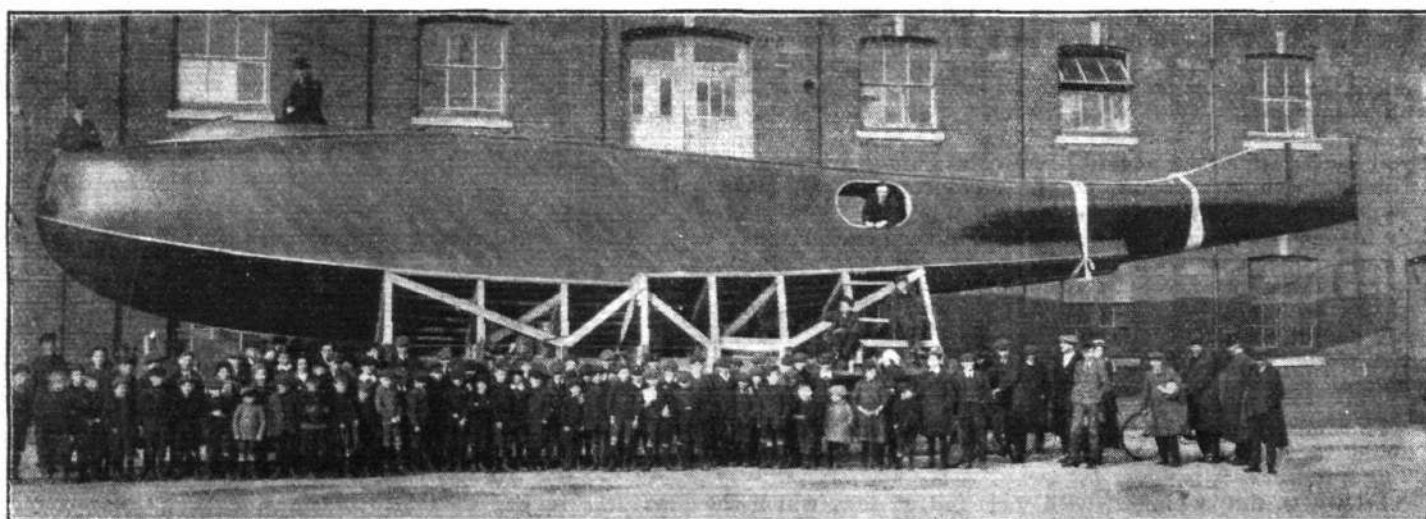
performance in New York in "Pennywise." As the "distribution" includes 10,000 pennies, five £1 gold pieces, four £2 gold pieces, and a £4 gold certificate, for our part *our* place during this stunt would be well under cover, without we could secure a guarantee that the gold certificate would be our portion of the loot.

A NUMBER of Canadian universities, including the McGill University, have decided to add a faculty of aviation to their other branches of study. Aeroplanes are to be put at the service of the universities for teaching purposes.

FORTY MILLION yards of surplus aeroplane linen is quite a nice dress length. If this quantity really is upon the hands of the Government, surely there should be little difficulty in getting rid of it in reasonable quantities, having regard to its very high quality, at reasonable rates, more than enough to cover the average contract rates of 1s. 8d. to



THE AUSTIN "GREYHOUND."—This machine is designed to carry three guns, camera, wireless, oxygen apparatus, etc. It is a two-seater, and is fitted with a 320 h.p. A.B.C. "Dragonfly" engine. The weight empty is 2,050 lbs. and fully loaded 3,090 lbs. The speed at 10,000 ft. is estimated at 130 m.p.h., and the climb to 10,000 ft. at 11 mins. The landing speed is about 45 m.p.h.



THE LARGEST FLYING-BOAT HULL IN THE WORLD.—This hull was built by the Gosport Aircraft Co. for the Air Ministry. The machine, when finished, will be even larger than the famous "Felixstowe Fury," and will be of 2,400 h.p.



The winning design, by Mr. F. G. Butcher, for the Wakefield R.A.F. Boxing Trophy, presented by Col. Sir Charles Cheers Wakefield, Bart., to the R.A.F.

3s. 1d. per yard, at which the country has acquired it. It seems an absurdity to suggest handing it over to some wily contractor at 1s. per yard, when by the judicious expenditure of a little cash in advertisements the lot should easily be cleared by the public. Ask one of the "white sale" firms to take the job on, and see what happens. It should go like hot cakes if cleverly featured. We could do with anything up to a yard ourselves.

A CHEER, if you please, for John Wilkins, fourteenth Baron of Chester, and first president of the Royal Society, who wrote in the year 1708 concerning "The Discovery of a New World: A discourse tending to prove that 'tis possible there may be ANOTHER HABITABLE WORLD IN THE MOONE, with a Discourse concerning the possibilities of a voyage thither. Woodcuts of a Flying Chariot by means of which might Luna be visited, whence locusts come, and whither birds migrate." That would be cheap at thirty shillings; I like Messrs. Sotheran's catalogue. For a few guineas you can obtain the record "Aerostate de l'Academie de Dijon," with an account of the adventures of M. l'Abbé Bertrand, who went up in a balloon intended to be steered by four blades circa 1784. How, though the blades broke, "a sensible movement was observed on the part of the balloon," to be followed by a yet more sensible movement on the part of the occupant, who got back to earth rather hurriedly. All about the Montgolfiers, too. For some reason I find the works of Mr. Henry Woodhouse, of America, in this gallery.

It reminds one of Cyrano de Bergerac's six methods of flying to the moon. Where is the book?—here, next to "Chanticleer," it is never far away.

First: to drape himself with vials full of dew, which the sun would draw upwards, and him with them. Next: to lift himself by exhausting the air in a cedar chest. Thirdly: to shoot himself upward by a steel spring catapult.

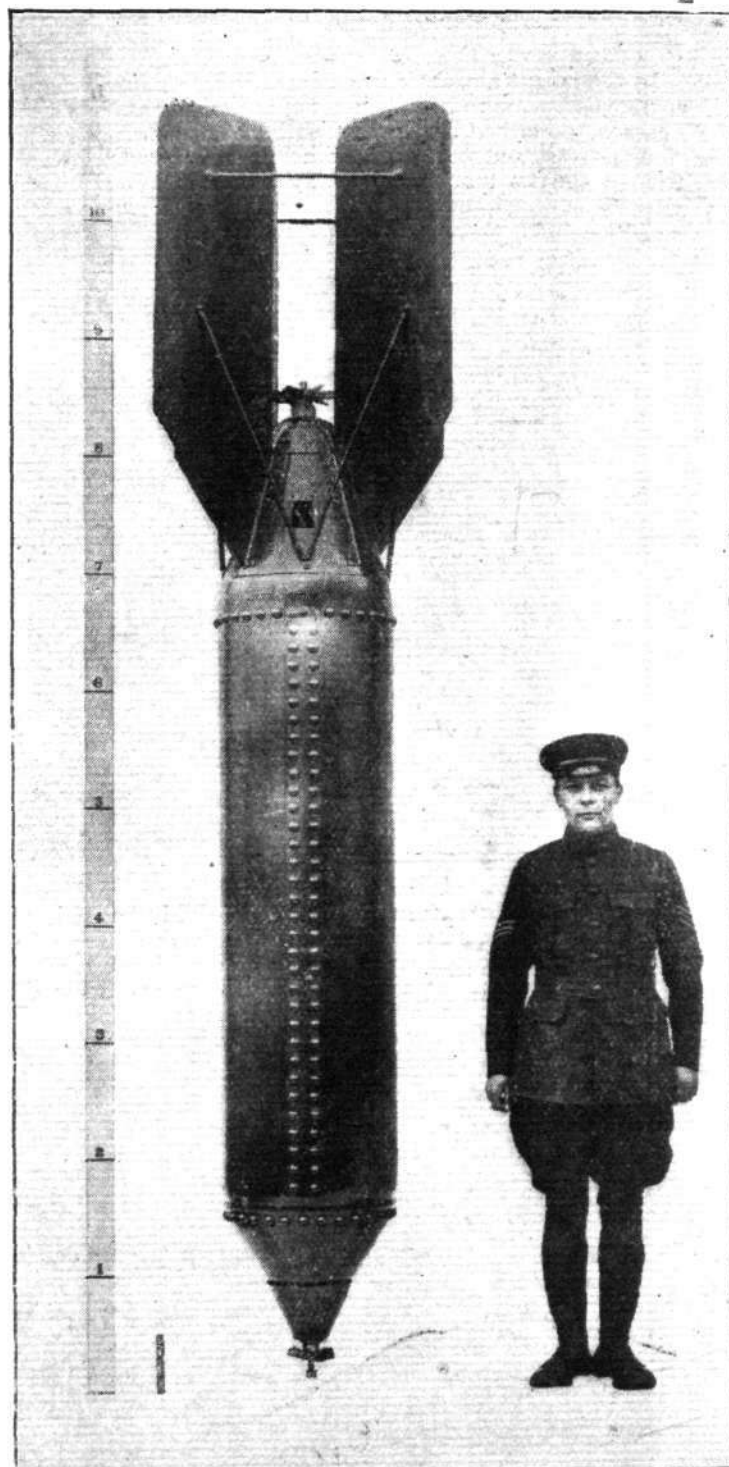
Fourthly; since smoke goes up, to attach himself to a globe filled therewith. Fifthly: as Phœbus loves the marrow of bulls, to anoint himself with that same.

Lastly:

"Enfin, me placant sur un plateau de fer,
Prendre un morceau d'aimant et le lancer en l'air!
Ca, c'est un bon moyen: le fer se précipite,
Aussitôt que l'aimant s'envole, à la poursuite;
On relance l'aimant bien vite, et cadédis!
On peut monter ainsi indéfiniment."

Which is perhaps the drollest conception of a possible form of flight that ever the human brain evolved!

THAT picture paper which caters for the flapper with sob-stuff serials and pictures of the latest successful breach of promise expert emerging from her last contest has a likeness of M. Fokker (Herr Fokker, one would have said), which has something of the leaden leer of the Mona Lisa. A note states that the gentleman in question is desirous of renouncing his German nationality and becoming a Dutchman. What would the indignant shade of Van Tromp say to this?



AT THE WAR IN THE AIR EXHIBITION.—What Berlin missed. And Berlin isn't sorry. A 1,800-pounder and the smallest bomb used. The sizes may be judged by comparing them with the man and the foot rule.

A THEORETICAL INVESTIGATION INTO THE STRESSES ARISING IN THE LANDING GEAR OF AN AEROPLANE

By H. H. THOMAS.

WHEN peace is signed, and things once more become normal, everything points to there being a demand for aeroplanes for purposes of pleasure and commerce. It is well known that the greatest difficulty is not in flying the machine—machines can be designed which fly themselves—but in getting off from, and alighting on, the ground; in view of which fact the following investigation into the probability of a machine being able to land automatically is perhaps not without interest.

The actual forces which the landing gear of an aeroplane is called upon to withstand cannot be determined with anything like the certainty that the flying stresses can. An arbitrary standard adopted by many aircraft designers is that the landing gear shall be able to stand up to a load equal to five times the dead weight of the machine. There is no justification for this particular figure except that it is found to give satisfactory results in the hands of trained pilots.

The kinetic energy of a moving body is equal to

$$\frac{WV^2}{2g} \text{ foot-pounds,}$$

where W is the weight of the body, and V is its velocity in feet per second. For the purpose in hand V should be the vertical component of the machine's velocity, and W should be that portion of the weight which is not air-borne. This point will be referred to later. For the moment we shall take W as being the total weight of the machine.

This kinetic energy must be absorbed by the landing gear on contact with the ground, and if the shock absorbing device can deflect d feet, the average intensity of the impact will be

$$\frac{WV^2}{2dg} \text{ pounds.}$$

But, assuming that the rubber stretches in accordance with a straight line law, the force decreases uniformly from a maximum to zero, and the maximum force equals twice the average force. Hence,

$$F = \frac{WV^2}{dg} \quad (1)$$

If h is the height of free fall, in feet, by a well-known theorem, $V^2 = 2gh$, and substituting this value of V^2 in (1) we get

$$F = \frac{2Wh}{d} \quad (2)$$

which gives us the force directly in terms of the height of free fall.

Taking $F = 5W$ according to usual practice,

$$5W = \frac{2Wh}{d} \text{ or } h = 2.5d. \quad (3)$$

In falling through h feet, Wh foot pounds of work are released, and must be taken up by the shock absorbers. The shock absorbers raise the machine again to a height of d feet, thereby utilising Wd foot pounds of this work. The difference between these quantities

$$W(h - d) \text{ foot-pounds}$$

must be absorbed in overcoming molecular friction in the rubber, and dissipated as heat.

According to Lanchester, each pound of rubber is able to absorb 500 ft. lbs. of work in this manner, so that if w be the weight of rubber employed,

$$w = \frac{W(h - d)}{500} \text{ lbs.}$$

Substituting from (3) for h , we get

$$w = \frac{W(2.5d - d)}{500} = \frac{1.5Wd}{500}$$

or $\frac{w}{W} = \frac{1.5d}{500}$

An average value for $\frac{w}{W}$ based on current practice, appears to be about .003, so that

$$d = \frac{.003 \times 500}{1.5} = 1 \text{ foot.}$$

It must be borne in mind that this is a maximum value, arising only at the instant when the landing gear reaches its maximum designed load, and any increase would result

in permanent distortion and injury to the structure. It is doubtful if the rubber is ever used in practice in such a manner as would permit the full extension of a foot, and at the same time give the necessary rigidity. If the required extension cannot take place, the work is not dissipated, and the machine rebounds. We see, however, from (2) that the stresses in the landing gear increase in the same ratio as the extension decreases, so that, in addition to the machine rebounding, the stresses will also be increased.

If we assume that 75 per cent. of the possible stretch of the rubber is realised, i.e., $d = .75 \text{ ft.} = 9 \text{ inches}$, the greatest height of free fall which the landing gear can withstand, is from equation (3) 22.5 inches.

This seems extremely small, but on the other hand fully explains the disastrous results of a "pancake" even when this is from an apparently trivial height. As the machine is necessarily moving forward, however, at the moment of alighting, some portion of the weight would be borne by the wings; there is also a cushioning effect, very pronounced if the wings are at all close to the ground. Both of these effects tend to cause the actual load on the landing gear to be less than the load as calculated above.

In any aeroplane let U_1 be the flying speed, and let the flight path be inclined to the horizontal at an angle θ , then

$$V_1 = U_1 \sin \theta.$$

If a machine be properly balanced and the pilot shuts off the engine and abandons the controls, the machine, left to itself, will automatically reach and maintain a speed such that the work done by its flight is a minimum. This speed, which is a function of the design and is constant for any particular machine, is known as the gliding speed, and θ becomes the gliding angle.

Calling the gliding speed U and the gliding angle γ ,

$$\cot \gamma = \frac{\text{total weight of machine}}{\text{total resistance of machine}} = \frac{W}{R}$$

$$\begin{aligned} \text{and } V &= U \sin \gamma = \frac{U}{\sqrt{1 + \cot^2 \gamma}} \\ \text{or } V^2 &= \frac{U^2}{1 + \frac{W^2}{R^2}} = \frac{U^2 R^2}{R^2 + W^2} \end{aligned} \quad (4)$$

Substituting this value of V^2 in (1) we get

$$F = \frac{W \cdot U^2 \cdot R^2}{d \cdot g (R^2 + W^2)}$$

or writing $W \tan \gamma$ for R this reduces to

$$F = \frac{W \cdot U^2 \cdot \tan^2 \gamma}{d \cdot g \cdot (\tan^2 \gamma + 1)} \quad (5)$$

which gives us the force of impact, and hence the necessary strength for the landing gear in order that the machine may be able to alight without assistance from the pilot.

In an average modern machine, weighing (say) 2,000 lbs., the gliding speed would be in the neighbourhood of 80 m.p.h. and the gliding angle, perhaps, 1 in 8. Taking these figures as correct for the purpose of illustration, and allowing the shock absorbers to deflect 9 ins. as before,

$$F = \frac{2,000 \times 117.5^2 \times 0.125^2}{0.75 \times 32.2 \times 1.0156} = 17,790 \text{ lbs.}$$

which is equal to 8.89 (say 9) times the weight of the machine.

To cover possible discrepancies between calculated and actual values of γ , d , and U it will be necessary to allow for a load at least 50 per cent. in excess of this. It would therefore appear that if the landing gear be made three times its present strength the machine will be able to land safely without the assistance of the pilot, though whether the crew, the engine and the petrol tanks would enjoy this style of landing is another story.

No account has been taken, in the foregoing investigation, of the effects of friction arising from contact of the wheels with the ground. This effect will be to introduce another force parallel to the ground, and therefore at right-angles to the force of impact. The true load in the landing gear will therefore be the resultant of these two forces, and will slope backwards at an angle β . The vertical load will be increased in the ratio of $\sec \beta$ to 1, and a horizontal force equal to $\tan \beta$ times the vertical load must be provided for.

For a land machine having wheels fitted with pneumatic

tyres, and running on plain bearings, as is usual in current practice, β is found experimentally to be about 15 deg.

It is not suggested that automatic landings should replace the present form—to do so would imply an ideal aero-

drome and a machine possessing not only perfect stability but also a degree of intelligence, or at least a sense of location—but it is quite possible to imagine cases where the ability to alight, in case of emergency, without expert guidance would be an advantage.

THE ROYAL AIR FORCE

London Gazette, April 1

The following temporary appointments are made:—
Staff Officer, 2nd Class.—(T.) Capt. F. H. Tyas, and to be actg. Maj. while so employed; Jan. 14.

Staff Officer, 3rd Class.—(Q.) Capt. A. Warnock; Oct. 18, 1918.

Flying Branch

Capt. C. H. Elliott-Smith to be actg. Maj. while employed as Maj. (A.); Sept. 12, 1918.

Lieut. G. S. O. Brien (Can. Cyc. Corps) to be actg. Capt. while employed as Capt. (A.); Oct. 1, 1918.

Lieut. (Hon. Capt.) S. J. Read to be actg. Capt. while employed as Capt. (A. and S.); July 1, 1918.

Sec. Lieut. C. Turner to be actg. Capt. while employed as Capt. (A. and S.); Nov. 1, 1918.

V. L. Watts (Temp. Sec. Lieut., Essex R.) is granted a temp. commn. as Sec. Lieut. (A.); Sept. 8, 1918.

Flt. Cadet 137533 W. V. Leftley is granted a temp. commn. as Sec. Lieut. (Obs. Officer); Oct. 3, 1918.

F. L. Barlow (Lieut., Quebec R., C.E.F.) is granted a temp. commn. as Sec. Lieut. (Obs. Officer); Nov. 9, 1918, and to be Hon. Lieut.

The following relinquish their commns. on ceasing to be employed:—
Sec. Lieut. (Hon. Lieut.) G. F. Davies (Lieut., Can. F.A.); Dec. 12, 1918.

Sec. Lieut. (Hon. Capt.) C. E. S. Dobbs, D.S.O. (Capt., R.A.S.C.); Jan. 4, 1918.

Sec. Lieut. (Hon. Lieut.) R. Andrews, M.C. (Lieut., Quebec R.); March 4, 1918.

Lieut. W. A. Benn (Lieut., Alb. R.); March 7, 1918.

Lieut. C. A. Howse (Lieut., B. Col. R.); March 13, 1918.

Lieut. H. P. Illsley (Lieut., Quebec R.); March 14, 1918.

Lieut. H. G. Little, (Sec. Lieut., S. Afr. Heavy Art.); March 22, 1918.

(Then follow the names of 837 officers who are transferred to the Unemployed List under various dates. We regret that owing to the great pressure on our space it is impossible to reprint this portion of the list.—Ed.)

Capt. W. P. C. Chambers resigns his commn.; April 2.

Lieut. W. S. Berkett relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank; April 2.

Sec. Lieut. R. W. Brigstock relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank; April 2.

Sec. Lieut. G. H. E. Roxburgh (High. L.I.) relinquishes his commn. on account of ill-health; April 2.

The surname of Lieut. (actg. Capt.) G. B. Gates is as now described, and not Bates as stated in the Gazette of Sept. 3, 1918.

The Christian names of Sec. Lieut. James Wilfred Sykes are as now described, and not as stated in the Gazette of Sept. 3, 1918, page 10396.

The notification in the Gazette of May 17, 1918, concerning Sec. Lieut. F. J. H. Bacon is cancelled.

The notification in the Gazette of March 18 concerning Sec. Lieut. K. P. McGowan is cancelled.

Administrative Branch

Maj. M. Marsden to be Maj., from (S.O.); March 25, 1918.

Lieuts. to be Lieuts.:—A. N. Jenks (Quebec R.), from (O.); Dec. 13, 1918.

E. C. Rylands, from (A.); Jan. 3, 1918.

Sec. Lieut. E. O. Johnson to be Lieut.; Jan. 13, 1918.

Sec. Lieuts. to be Sec. Lieuts.:—C. Wright, from (O.); Feb. 8, E. M. Prichard, from (A.); Feb. 26, 1918.

Lieut. F. C. Lynch-Blosse (Lieut., Ir. Gds.) relinquishes his commn. on ceasing to be employed; Feb. 15, 1918.

(Then follow the names of 199 officers who are transferred to the Unemployed List under various dates.)

The surname of Lieut. (actg. Capt.) J. G. Ryrie is as now described, and not Pyrie as stated in Gazette of Feb. 21, 1918.

The notification in Gazette of March 14 concerning Lieut. T. L. Green is cancelled.

The notification in Gazette of March 25 concerning Sec. Lieut. H. B. Elbourne is cancelled.

Technical Branch

Maj. (actg. Lieut.-Col.) H. R. Vagg to be Maj. (Grade A), and relinquishes the actg. rank of Lieut.-Col. on ceasing to be employed as Lieut.-Col.; March 12, 1918.

Lieut. T. C. Penna to be actg. Capt. whilst employed as Capt. (Grade B); Aug. 12, 1918.

Sec. Lieut. (actg. Lieut.) A. C. F. Hill to be actg. Capt. whilst employed as Capt. (Grade B), from (Ad.); Sept. 14, 1918.

Lieut. S. Symonds to be graded for purposes of pay as Lieut. whilst employed as Lieut. (Grade B); Oct. 22, 1918.

Sec. Lieut. A. V. Baker to be actg. Lieut. whilst employed as Lieut. (Grade B); Dec. 16, 1918.

Sec. Lieut. (Hon. Capt.) C. C. Clark to be Sec. Lieut. (Grade A), from (Grade B), and to be Hon. Capt.; March 4, 1918.

Sec. Lieut. H. B. Chorley to be Sec. Lieut. (Grade B), from (Ad.); Dec. 11, 1918.

Capt. W. B. Daniels (Lieut., R.N.V.R.) relinquishes his commn. on ceasing to be employed; Dec. 30, 1918.

(Then follow the names of 218 officers who are transferred to the Unemployed List under various dates.)

Lieut. J. P. Rowell resigns his commn.; April 2.

Sec. Lieuts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—G. J. Cannon, C. F. Murrin (contracted on active service); April 2.

Medical Branch

Lieut.-Col. C. B. Heald, C.B.E., to be Lieut.-Col., from (S.O.); Feb. 10, 1918.

The following are transfd. to Unemployed List:—Capt. F. Roberts; Feb. 5, Lieut. K. Batten; Feb. 9, Lieut. P. Ashton; Feb. 11, Lieut. C. A. E. Cook; Feb. 16, Lieut. G. A. Roper, Lieut. A. Read; Feb. 19, Capt. (Hon. Lieut.-Col.) J. MacLaughlin; Feb. 22, Capt. A. A. Wilkinson; Feb. 25, Capt. (actg. Maj.) A. A. Risset; March 1, Capt. E. W. W. Jones; March 4, Capt. E. P. Chennells; March 9, Capt. T. E. Regan, Capt. L. C. Rivett; March 11, Capt. A. B. Bradford; March 13, Lieut. J. D. George, Capt. N. F. Lloyd, Lieut. H. T. Rymer, Capt. A. H. L. Thomas; March 14, Capt. H. P. Helsham, Lieut. J. S. Harbinson; March 19, 1918.

Dental Branch

Lieut. H. N. Hillier is transfd. to Unemployed List; Feb. 21, 1918.

Physical Training Branch

Capt. V. C. Hollender is transfd. to Unemployed List; March 6, 1918.

Memoranda

Lieut. H. J. S. Ferry relinquishes his commn. on ceasing to be employed; Jan. 18, 1918.

The following are transfd. to Unemployed List, from (S.O.):—Sec. Lieut. (actg. Capt.) A. W. Rippon; Jan. 24, Capt. (actg. Maj.) H. Welch; Jan. 25, Capt. (actg. Maj.) J. G. Howell, M.C.; Jan. 28, Lieut. St. B. Goldsmith; Jan. 31, Maj. L. W. W. Lees, Lieut. (actg. Maj.) F. J. Lees, Capt. (actg. Maj.) A. A. Nathan; Feb. 1, Maj. Hon. M. Baring, O.B.E.; Feb. 14, Capt. J. D. Greenwood; Feb. 17, Lieut. (actg. Capt.) A. Cunningham-Reid; Feb. 18, Lieut. (actg. Maj.) P. C. Hoyland, M.B.E.; Feb. 27, Maj. D. Illingworth, Lieut. (Hon. Capt.) (actg. Capt.) P. E. Tickler; March 1, Capt. H. P. S. Clogstoun, M.B.E., Capt. C. K. Jupp; March 2, Lieut. A. G. O. Ellis, Capt. G. M. Gibbs; March 5, Maj. C. R. Abbott, M.B.E.; March 6, Maj. E. E. Robb; March 8, Capt. P. L. R. Fraser; March 14, Maj. (actg. Lieut.-Col.) S. S. Kennedy, O.B.E.; March 15, Capt. H. B. Dresser; March 19, Maj. S. Flower, Sec. Lieut. (Hon. Lieut.) (actg. Capt.) C. Trenchard, Capt. (actg. Maj.) V. Ward-Browne, O.B.E., M.C.; March 21, Lieut. (actg. Maj.) C. C. Hansford; March 24, Maj. F. A. Forde, Lieut. (actg. Capt.) A. H. King; March 25, 1918.

London Gazette, April 4

The following temporary appointments are made:—
Staff Officers, 2nd Class.—And to be actg. Maj. whilst so employed, but not already holding that rank. (Air.)—Maj. A. B. Ennis; Feb. 6, (Q.)—Sec. Lieut. (actg. Capt.) W. G. Webber; Nov. 29, 1918. Capt. R. D. Seddon; March 12, 1918.

Staff Officers, 3rd Class.—And to be actg. Capt. whilst so employed. (Q.)—Lieut. H. Pallett; Dec. 21, 1918. (T.)—Sec. Lieut. (Hon. Lieut.) G. A. Tilly; March 4, 1918.

Flying Branch

Lieut. G. N. Trace to be actg. Capt. whilst employed as Capt. (A. and S.); March 7, 1918.

Sec. Lieut. L. J. Betts (late Gen. List, R.F.C., on prob.) is confirmed in his rank as Sec. Lieut. (A.); Oct. 26, 1918. (Substituted for the notification in Gazette of Feb. 14, page 2274; Flt. Cadet 101288 E. H. Simmons is granted a temp. commn. as Sec. Lieut. (A.); Sept. 12, 1918.

S. F. Parker (Lieut., Midd. & R. S.R.) is granted a temp. commn. as Sec. Lieut. (Obs. Officer); July 1, 1918, and to be Hon. Lieut.

The following relinquish their commns. on ceasing to be employed:—
Sec. Lieut. I. K. Bell (Can. Engrs.); Dec. 11, 1918. Sec. Lieut. J. Collins (Rf. Bde.); Feb. 16, Lieut. (actg. Capt.) F. V. Robinson, D.F.C. (Sask. R.); Feb. 28, Lieut. H. W. Higham (Lieut., Notts and Derby R.); Lieut. R. A. Varley (Lieut., N. Staffs R.); March 3, Sec. Lieut. (Hon. Lieut.) C. H. H. C. Cook (Lieut., D. of Corn. L.I.); March 7, Lieut. B. H. Smyth (Lieut., Glouc. R.); March 8, Lieut. O. A. Rowan (Lieut., B. Col. R.); March 27, 1918.

(Then follow the names of 451 officers transferred to the Unemployed List under various dates.)

The following relinquish their commns. on account of ill-health caused by wounds, and are permitted to retain the rank of Capt.:—Capt. J. S. Dunkerly, Lieut. (actg. Capt.) F. J. Davies, D.F.C.; April 5, 1918.

The following Lieuts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—J. S. Abel (contracted on active service), C. H. Brown (caused by wounds), A. T. Croucher (contracted on active service), C. N. Hosken; April 5, 1918.

The following Sec. Lieuts. relinquish their commns. on account of ill-health contracted on active service, and are permitted to retain their rank:—R. W. Brigstock, W. T. Davies; April 5, 1918.

Sec. Lieut. J. L. Boyd is ante-dated in his appointment as Sec. Lieut. (A.); Aug. 23, 1918.

The ante-date of Sec. Lieut. W. R. Allison is May 10, 1918, and not as stated in Gazette March 7, 1918.

The initials of Capt. (actg. Maj.) C. J. Clayton, D.F.C., are as now described, and not as stated in Gazette March 11, 1918.

The surname of Lieut. T. S. Millar is as now described, and not as stated in Gazette Dec. 31, 1918.

Administrative Branch

Maj. (actg. Lieut.-Col.) F. V. H. Mackenzie to be Maj. from (S.O.), and relinquishes the actg. rank of Lieut.-Col.; Feb. 1, 1918.

Capt. to be actg. Maj. whilst employed as Maj.:—W. R. C. Dacosta, from (A.); Oct. 30, 1918. C. Hodgkinson-Smith, from (S.O.); March 10, 1918.

R. G. Staveley-Dale (temp. and actg. Capt., R.A.) is granted a temp. commn. as Capt.; Oct. 21, 1918, seniority from April 1, 1918.

Lieuts. to be actg. Capt. whilst employed as Capt.:—H. F. J. Capelli; Sept. 30, 1918. N. M. Hoskins, from (K.B.); Feb. 13, 1918.

The following Lieuts. (actg. Capt.) relinquish the actg. rank of Capt.:—
H. D. Duncan, L. H. Hall, D. E. B. Shipwright, C. H. Stonham; March 1, 1918.

Lieuts. (A.) to be Lieuts.:—A. Dawes, A. C. B. Harrison, M.C.; Nov. 1, 1918. W. A. Brown; Nov. 3, 1918. T. M. Nicholl-Carne; Nov. 12, 1918. W. Green; Nov. 19, 1918. J. B. Lawton; Dec. 14, 1918. G. L. Du Cros; Jan. 4, 1919. M. J. J. G. Mare-Montebault; Jan. 5, 1919. J. L. Des Lauriers; Jan. 6, 1919. J. H. Baring-Gould; Jan. 16, 1919. J. Bremner; Feb. 1, 1919. E. M. Milling; Feb. 11, 1919. G. A. Kinmont; Feb. 27, 1919.

Lieut. W. E. Giffard to be Lieut., from (K.B.); March 1, 1919.

Lieuts. (O.) to be Lieuts.:—O. I. Norton; Nov. 1, 1918. V. C. Baker; Jan. 2, 1919. C. E. B. Binn; Jan. 9, 1919. R. B. Lane; Feb. 1, 1919. A. Impey; Feb. 24, 1919. C. B. Holland; March 1, 1919.

W. Blake (Lieut. and Qrmr., Gen. List) is granted a temp. commn. as Lieut.; April 1, 1919.

Sec. Lieut. W. L. Roblon to be actg. Lieut. while employed as Lieut., from (A.); Dec. 6, 1918.

Sec. Lieuts. to be Sec. Lieuts., from (A.):—W. Schaefer; Jan. 21, 1919. L. C. Phippen; Jan. 29, 1919. G. Lovett; Feb. 12, 1919. F. G. Urmston; Feb. 19, 1919. C. E. Thorpe; Feb. 25, 1919. R. J. Searle; Feb. 25, 1919. L. B. Raymond; March 3, 1919. A. E. Buckingham; March 5, 1919.

Sec. Lieut. A. A. J. Poole to be Sec. Lieut., from (A. and S.); Jan. 6, and to be Hon. Lieut.

Sec. Lieut. S. V. Annis to be Sec. Lieut., from (K.B.); March 3.

Sec. Lieut. to be Sec. Lieuts., from (O.):—N. F. Penruddocks; Dec. 30, 1918, and to be Hon. Lieut. B. Shaw; Jan. 22. W. Hagan; Feb. 25. A. B. Poel; Feb. 26. B. Troth, W. Haviland; Feb. 27.

Sec. Lieut. (Hon. Lieut.) C. C. Duffield to be Sec. Lieut., from (T.); Oct. 2, 1918, and to be Hon. Lieut.

Sec. Lieut. L. P. Kirk (late Gen. List, R.F.C., on prob.) is confirmed in his rank as Sec. Lieut.; May 8, 1918.

Lieut. F. Dransfield (R.N.R.) relinquishes his commn. on ceasing to be employed; Jan. 24.

(Then follow the names of 143 officers transferred to the Unemployed List under various dates.)

Sec. Lieut. A. J. F. Critchel relinquishes his commn. on account of ill-health and is permitted to retain his rank; April 5.

Technical Branch.

Capt. to be Capt. (Grade A).—F. R. Arthur, from (Ad.); April 1, 1918. E. Cox, from (S.O.); March 16.

Granted temp. commns. as Capt. (Grade A), with seniority from April 1, 1918:—L. H. M. Bennett (Lieut., R.N.V.R.); July 24, 1918. A. Richard (Lieut., R.N.); Jan. 6.

Lieut. S. J. Gardiner to be Lieut. (Grade A) from (A); March 14.

Sec. Lieut. C. C. Parrott to be Lieut., but without pay and allowances of that rank; Jan. 29.

Sec. Lieut. C. F. Ambler, D.F.C., to be actg. Lieut. (Grade A.) from (O.), whilst employed as Asst. Instr.; Oct. 28, 1918 (substituted for notification in *Gazette* of Feb. 14).

Sec. Lieut. J. J. Shuley to be Sec. Lieut. (Grade B.), from (Ad.); Oct. 1, 1918.

Sec. Lieut. C. H. Bunn (late Gen. List, R.F.C., on prob.) is confirmed in his rank as Sec. Lieut. (Grade A.); Dec. 1, 1918 (substituted for notification in *Gazette* of March 18).

(Then follow the names of 138 officers transferred to the Unemployed List, under various dates.)

Capt. T. Ridge (R.E.) relinquishes his commn. on account of ill-health; April 5.

The surname of Sec. Lieut. (actg. Lieut.) J. Rollo is as now described, and not as stated in *Gazette* of March 4.

The notification in *Gazette* of Feb. 7 concerning Sec. Lieut. (actg. Lieut.) L. B. Clarkson is cancelled.

Medical Branch

J. Kyle is granted a temp. commn. as Lieut.; April 2.

The following are transfd. to Unemployed List:—Lieut. G. A. Simmons;

Feb. 27. Capt. T. E. Mulvany; March 3. Capt. W. L. Scott; March 13. Capt. A. S. Glegg; March 15. Capt. (actg. Maj.) H. Stedman; March 20. Capt. R. G. Maglione; March 21. Capt. A. L. Dykes; March 25.

Capt. J. W. Brash (R.A.M.C., S.R.) relinquishes his commn. on account of ill-health; March 1.

The notification in *Gazette* of Nov. 26, 1918, concerning Capt. H. H. Gellert is cancelled.

Dental Branch

Lieut. D. H. W. Williamson to be Capt.; Nov. 12, 1918. Lieut. A. E. F. Peaty is transfd. to Unemployed List; March 11.

Memoranda

Lieut. W. B. Gullen relinquishes his commn. on ceasing to be employed; March 16.

Lieut. R. N. Bal is transfd. to Unemployed List; March 20.

The following are transfd. to Unemployed List from (S.O.):—Lieut. C. T. S. Mendl; Feb. 11. Maj. W. E. Plaister, M.B.E.; Feb. 21. Capt. (actg. Maj.) C. B. Krabbe; March 2. Capt. H. Spink; March 6. Capt. W. A. Daft, Lieut. G. Purvis-Russell-Balfour-Kinnear, Maj. Hon. J. H. B. Rodney, M.C. (Rif. Bde.); March 11. Maj. S. O. Everitt, Lieut. (actg. Capt.) L. R. Neville; March 15. Lieut. (actg. Capt.) T. A. Peddell, M.B.E.; March 20. Capt. (actg. Maj.) A. H. Parker, M.C.; March 21.

The name of Miss Annie O'Donoghue is as now described, and not as stated in *Gazette* of Feb. 28.

Corrections

Lieut. E. P. Kenny, D.F.C., 1st Sqdn., Australian Flying Corps, and Royal Air Force (Egypt), awarded the Distinguished Flying Cross in the *London Gazette* of Feb. 8. The note therein referring to the Military Cross is cancelled. Lieut. Kenny has not been awarded that distinction.

Capt. (A. Maj.) H. I. Hamner, D.F.C. (S. Staff. R.) (Egypt), awarded the Distinguished Flying Cross in *Gazette* of Jan. 1—the announcement in *Gazette* of Feb. 8 (award of Distinguished Flying Cross) should accordingly read Bar thereto.

Lieut. G. Davis, D.F.C., awarded the Distinguished Flying Cross in *Gazette* of Feb. 8 is now correctly described (53rd Sqdn., France).

Capt. A. G. A. Davis, A.F.C. (Devon R.), awarded the Air Force Cross in *Gazette* of Jan. 1, is now correctly described.

No. 19061 Flight Sgt. T. Nicoll, Royal Air Force, awarded the Albert Medal for gallantry in France on Feb. 26, 1918, as announced in the *London Gazette* of June 7, 1918, is now correctly described.

Lieut. (A. Capt.) A. R. Brown, D.F.C. (Aust. F.C.), awarded the D.F. Cross in *Gazette* of Feb. 8, is now correctly described.

Lieut. P. J. McGinness, D.F.C., D.C.M. (Aust. F.C.), awarded the D.F. Cross in *Gazette* of Feb. 8, is now correctly described.

Lieut. C. E. Channing, A.F.C. (formerly Gunner, R.G.A.), awarded the Air Force Cross in the *Gazette* of Nov. 2, 1918, is now correctly described.



QUESTIONS IN PARLIAMENT

Aircraft Disposal Department (Linen)

Lieut.-Col. MALONE, on March 28, asked the Under-Secretary of State to the Air Ministry how many yards of linen are now in the possession of the Aircraft Disposal Department?

Mr. Kellaway: The total stocks of linen in the possession of the Ministry of Munitions and available for disposal is 31,970,725 yards.

R.A.F. Store Deficiencies

Mr. RAPER asked the Under-Secretary of State to the Air Ministry how much has been written off as a charge against the public for stores deficiencies of squadrons stationed in Great Britain since the War began; and what percentage of this amount has been recovered from the officers responsible for such deficiencies?

Mr. Pratt (Lord of the Treasury): These squadrons served with the Navy or Army until April, 1918, when they were transferred to the Air Force, and the value of the stores written off could only be ascertained by much labour on the part of the local and headquarter staffs of the three forces. The results of the enquiry would be misleading, since the write-off did not always represent actual deficiencies, but sometimes represented discrepancies due to defective accounting during war pressure. The money recovered from officers responsible bears no direct ratio to the value of the stores deficient.

Aerodrome Accounts and a Public Auditor

Mr. RAPER asked the Under-Secretary of State to the Air Ministry what were the exact reasons given by a public auditor for resigning at the end of last year from his position as voluntary auditor of aerodrome accounts?

Mr. Pratt: The specific grounds stated were:—(1) That no attempt was made to provide the auditors in question with necessary staff; (2) that the highest salary paid in the Department responsible for passing bills was £250, and very few of the staff had any knowledge of the work prior to engagement; and (3) that several members of the staff were highly dissatisfied as to their future, and it was a matter of extreme urgency that something should be done in that respect. Various matters were referred to in general terms, but these were the only specific reasons given.

Sir E. Carson: Were those reasons true reasons?

Mr. Pratt: Oh, no, Sir, I could not answer that question.

Air Ministry Organisation

Mr. RAPER asked the Under-Secretary of State to the Air Ministry if he will appoint a small but permanent Committee, composed of two or three hon. members of this House and two or three gentlemen outside the House who have a knowledge of commercial organisation, to assist the Air Ministry authorities in finance and business matters generally?

Mr. Pratt: My hon. friend's suggestion is noted, and will be borne in mind as the organisation of the Air Ministry develops. The principle underlying it has already been accepted by the approval of a Standing Committee with outside representation to watch the working of the orders regarding civil aviation shortly to be issued under the Air Navigation Acts.

Mr. Raper: Can the hon. gentleman say who are the members of the Committee?

Mr. Pratt: Perhaps my hon. friend will put that question down on the Paper.

Director of Production and Research

Mr. RAPER asked the Under-Secretary of State to the Air Ministry what are the duties of the Director of Production and Research; and is this officer under Genl. Sykes or Genl. Trenchard?

Mr. Pratt: My hon. friend no doubt refers to the Director-General of Supply and Research. Genl. Ellington is a member of the Air Council of equal status with Generals Trenchard and Sykes. His duties are to control the Departments of Supply, Inspection and Research in the Air Ministry.

Mr. Raper: Has Genl. Ellington had any business or scientific experience qualifying him for the position?

Mr. Speaker: The hon. member had better give notice of that question.

Air Stations Closed Down

Sir ARTHUR FELL asked the Under-Secretary of State to the Air Ministry how many of the existing air stations have been closed down since the Armistice; and how many stations it is proposed to maintain permanently after the peace is signed?

Mr. Pratt: It is estimated that forty stations will be required permanently for Royal Air Force purposes. When the Armistice was concluded the policy adopted was to abandon landing grounds and stop work on stations under construction wherever possible. Work has been stopped on 128 stations. In arriving at this figure account has been taken of requirements for temporary storage and for civil aviation as well as of permanent Royal Air Force requirements.

The Transatlantic Flight

Sir ARTHUR FELL asked the Under-Secretary of State to the Air Ministry if the Government is taking any part in the preparations for the suggested flight of aeroplanes across the Atlantic; and, if so, what limit is put on the expenses to be incurred on this account?

Mr. Pratt: The various problems connected with the Atlantic flight have received and are receiving the close attention of the Air Ministry in consultation with private persons and companies interested. The question of direct Government participation has not been finally settled.

Sir A. Fell: Is any sum to be devoted to this attempted Atlantic flight?

Mr. Pratt: Perhaps the hon. member will give notice of that question.

Demobilisation

Sir A. FELL asked the Under-Secretary of State to the Air Ministry what is the present position of the demobilisation of the Air Force; and if it is being carried out as rapidly as that of the Army?

Mr. Pratt: Up to the 26th of this month 8,544 officers and 169,322 other ranks had been dispersed from the Royal Air Force. The answer to the second part of the question is in the affirmative.

Air Ministry Contracts

Mr. RAPER, on April 1, asked if the Break Clause has been imposed in the case of all contracts which were in force when the Armistice was signed for the supply of aeroplanes, engines, and spare parts; and whether in any case the imposition of this Break Clause has been subsequently varied?

Mr. Hope: The Break Clause has been imposed on all contracts for aeroplanes, seaplanes, engines and spare parts, in force at the date of the Armistice, with the exception of contracts for certain of the latest types of machines and engines, which the Ministry of Munitions has requested by the Air Ministry to complete, and of contracts for obsolete types where it has been thought preferable to stop work rather than to incur expenditure during the Break period. The quantities to be delivered under the Break Clause have, in many cases, been varied, after investigation of the work in progress, in order to secure the greatest economy, having regard to the expenditure already incurred, and the value of the articles when completed.

Mr. Raper: Will the hon. gentleman give particulars of the contracts which have been varied?

Mr. Hope: I think that would be too long. Perhaps my hon. friend will communicate with me on that matter.

Mr. Raper asked why the system which was adopted of allowing contractors a certain profit on materials supplied to them by the Government was made retrospective?

Mr. Hope: From the form of the question it is not possible to identify the system to which my hon. friend refers. If he will supply me with further particulars I will have inquiries made.

Hostile Aircraft (Insurance Premiums)

Maj. WHEELER asked the Secretary to the Board of Trade the grounds on which it is said to be not practicable to make refunds to those public bodies of the insurance premiums against hostile aircraft which were paid shortly before the Armistice on November 11?

Mr. Bridgeman: It is estimated that there were about 2,500,000 policies

in force at the date of the Armistice, and it would need a separate calculation in each case to determine what is the proper amount to be returned. The scheme is worked almost entirely through the fire insurance companies, who have not the staff to do the work involved in the refunds. For these reasons the Aircraft Insurance Committee came to the conclusion that it was impracticable to make a general refund of premiums, and no special exceptions can be made.

Maj. Wheler: Is it not a fact that considerable profit was made, and could not some refund be made?

Mr. Bridgeman: The Government have made a considerable amount out of this, but they have had to pay for aircraft defence.

An Hon. Member: Is it not possible out of these profits to make refunds to those people who have had their property destroyed by aircraft prior to the date on which their policy was put into force?

Mr. Bridgeman: I must have notice of that question.

Demobilisation of the R.A.F.

Maj. HENDERSON, on April 2, asked the Secretary of State for War whether he is aware that men of the Royal Air Force are being offered early demobilisation provided they accept a scheme of deferred payment; if he will state when this scheme was introduced; and whether he is aware that this system lays itself open to the argument that a man must accept the scheme, whether he likes it or not, unless he wishes his demobilisation to be delayed?

The Secretary of State for War (Mr. Churchill): I am aware of this scheme referred to by my hon. and gallant friend. It was introduced about the end of January last solely with the object of suiting the convenience of men who were in a hurry to take up jobs in civil life. It has the effect of enabling men who voluntarily adopt it to be demobilised more speedily than would otherwise be possible. No man who refuses to accept the scheme loses his turn for ordinary demobilisation, which goes on continuously at a fixed rate. I may add that the adoption of the scheme reduces the expenditure incurred. From every point of view the scheme is much to be commended.

Miss Violet Douglas-Pennant

Lieut.-Col. MALONE, on April 3, asked the Secretary of State for War whether a *prima facie* charge has now been received on behalf of Miss Violet Douglas-Pennant; and whether he will now carry out his pledges given on March 13 to constitute a full inquiry into the circumstances surrounding her case?

Mr. Churchill: The answer to the first question is in the negative. The second question accordingly does not arise.

Lieut.-Col. Malone: Is it the fact that no communication has been received?

Mr. Churchill: No, Sir. Communications have been received, but they do not fulfil the condition which I made in the House and of which the House generally approved.

Aircraft Conveyance of Letters

Mr. GILBERT asked the Postmaster-General if any licence or permit has been given to any private aircraft company to convey letters from this country to France; and, if so, if he can state the name of the firm and the conditions on which they have been granted?

Mr. Illingworth: The answer is in the negative.

Air Ministry (Purchases of Linen)

Lieut.-Col. MALONE asked the Under-Secretary of State to the Air Ministry the names of the firms of contractors from whom linen was purchased during the War; the price per yard at which it was purchased; and what arrangements are being made for its disposal?

The Deputy-Minister for Munitions (Mr. Kellaway): I have been asked to answer this question. Linen was purchased from 137 contractors, whose names I shall be glad to send to my hon. and gallant friend if he should desire me to do so. The price per yard varied with the price of flax. At the time of the Armistice the price ranged from 1s. 8d. for spaced fabric to 3s. 0d. for solid fabrics. A considerable quantity of linen is being disposed of in this country in small lots by public tender after advertisement, and arrangements are being made for meeting the demands in foreign markets.

Mr. MacVeagh: How many millions of yards of linen are now being treated as scrapped by the authorities?

Mr. Kellaway: None of it is being treated as scrapped.

Mr. MacVeagh: How many millions of yards were over-ordered?

Mr. Kellaway: The probable surplus is something like 40,000,000 yards.

Lieut.-Col. Malone: And what price is being obtained for it?

Mr. Kellaway: I cannot give the figures off-hand, but the contractors offered 1s. a yard.

The Commercial Organisation Committee

Mr. RAPER asked the Under-Secretary of State to the Air Ministry when he will give a definite reply as to whether or not he will appoint a small but permanent Committee, composed of two or three hon. members of this House and two or three gentlemen outside the House who have a knowledge of commercial organisation, to assist the Air Ministry authorities in finance and business matters generally; and whether such a Committee is specially desirable during the present reorganisation of the Air Ministry and in view of the admitted defective accounting in the past?

Mr. Churchill: I refer my hon. friend to the answer given to him on the 31st ultimo.

Mr. Raper: Are we to understand that a Committee does actually exist? Can we have the names of the members?

Mr. Churchill: No, Sir, that is not to be deduced from my answer. But there are certain competent men who are associated in an important way with the work of the Air Ministry.

Lieut.-Col. Malone: Can their names be supplied?

Mr. Churchill: They are men from the Army Council who are associated with the Air Ministry in an advisory capacity.

Mr. Raper: Will the right hon. gentleman consider the desirability of appointing a Committee such as I have suggested?

Mr. Churchill: I will, indeed.

Enlistment in the R.A.F.

DETAILS have now been issued regarding the enlistment of demobilised soldiers in the R.A.F. Application should be made in writing to the nearest R.A.F. reception dépôt, which in London is at 40, Upper Brook Street, Mayfair, W. 1. The following particulars should be given:—Regimental number; rank (substantive or acting, as the case may be) he held in the Army immediately prior to demobilisation; name in full; corps in the Army; trade and other qualifications, if any, in the Army; trade or calling in civil life; medical category; home address; if still on demobilisation furlough, date of expiration of furlough. Enlistments may be for

Handley-Pages at Hendon

Mr. RAPER asked the Under-Secretary of State to the Air Ministry if he is aware that about twenty Handley-Page machines, some with engines and some without, have been left uncovered in the wet at Hendon for periods varying from one month to three months, all through the recent bad weather, with the result that practically all of them are only now fit to be written off; whether the reason put forward for their being there is that there was no accommodation to house them; is he aware that the Kite Balloon Department offered to lend the Aeroplane Department portable sheds, originally built for the housing of kite balloons, but which would have accommodated the Handley-Page machines quite comfortably with their wings folded, and is he aware that these Handley-Page machines cost the country something like £200,000, that they are still standing out in the open rotting, and that the said kite balloon sheds are all carefully stored away in their folded-up condition, being eaten by rats?

Mr. Pratt (Lord of the Treasury): The aeroplanes in question are constructed to withstand exposure without permanent damage, and none of the Handley-Pages at Hendon have rotted in any way. Of the number stored there temporarily to await accommodation becoming available, the majority have now been either flown away or stored under cover at Hendon. Eight machines still remain in the open, and will be flown away as soon as circumstances permit.

The proposal to erect kite balloon sheds would have involved an amount of labour not justified by the requirements of the case.

Mr. Raper: May I take it that every one of these machines is in perfect order?

Mr. Pratt: I am sorry I cannot add anything to the answer I have already given my hon. friend.

Civil Aviation Staff, etc.

Mr. JOYNSON-HICKS asked the Under-Secretary of State to the Air Ministry whether he can now make a statement as to the staff and work of the Controller of Civil Aviation?

The Secretary of State for War (Mr. Churchill): The Controller-General of Civil Aviation is the member of the Air Council responsible for the executive work falling to the Air Ministry under the Air Navigation Acts, 1911-1919, and for carrying out the accepted policy of assisting the development of civil aviation. It is proposed that he shall be assisted by four heads of Departments who will take charge of planning, information, communications, and aerodromes, respectively. Provision will also be made for meteorological services. Terms for the heads of Departments have been approved, appointment of staff is proceeding, and the Department is being formally constituted as from April 1, being the beginning of the financial year.

Mr. Joynton-Hicks: I do not want to press the right hon. gentleman unduly, but perhaps he could mention a date when he will be able to make a full statement as to the appointment of the staff and the allocation of the work?

Mr. Churchill: I think that in the next few days I can mention the principal office holders, but I really think it would be a pity to hurry the selection of the filling of the positions of second rank.

Mr. Joynton-Hicks asked the Under-Secretary of State to the Air Ministry whether he can give an assurance that the Royal Air Force is not in any way to be brought under the control of the War Office and that civil aviation will not in any way be placed under the control of the Minister of Ways and Communications?

Mr. Churchill: There is no intention of bringing the Royal Air Force under the control of the War Office or of placing civil aviation under the control of the Ministry of Ways and Communications. Cabinet decisions in this sense have been definitely obtained.

Director-General of Supply and Research

Mr. RAPER asked the Under-Secretary of State to the Air Ministry where the Director-General of Supply and Research acquired the necessary business and technical experience to qualify him for this post?

Mr. Churchill: The Director-General of Supply and Research is an officer who rendered brilliant war service in the Army and in the Air Force, and was for a considerable period Controller-General of Equipment in the Air Ministry. I am satisfied that he is well qualified for the appointment which he holds.

Aerodrome Construction and Contractors' Profits

Mr. RAPER asked the Under-Secretary of State to the Air Ministry why the system which was adopted of allowing contractors for the construction of aerodromes a certain profit on materials supplied to them by the Government was made retrospective?

Mr. Pratt: Under the original War Office contracts for aerodrome construction the contractors did not receive commission on materials supplied by the Government, but at that time the actual control of materials by Government was small. When the Air Ministry took over the contracts the situation in regard to Government control of materials had entirely changed. In order to expedite progress on the aerodromes modifications in the contracts were made, and it was decided that it would be fair as part of these arrangements to allow a commission on all materials actually handled by the contractors as from the date of the original contract.

Mr. Raper: Is it not the fact that this is being made retrospective and applied to contracts already completed?

Air Ministry Staff

Viscount WOLMER asked the Under-Secretary of State to the Air Ministry whether he is aware that several disabled and demobilised officers who have been employed in the Air Ministry have recently had their services dispensed with, while women are being retained in the Air Ministry at exactly the same work as these officers performed; and whether it is the intention of the Ministry to give preference to civilians over officers who have become disabled during the War?

Maj.-Genl. Seely: I am aware that a number of disabled officers who have been employed in the Air Ministry have recently had their services dispensed with, but women are not being retained in the Air Ministry on exactly the same work as these officers performed. It is not the intention of the Ministry to give preference to civilians over officers who have become disabled through the war, though in filling up the establishment of the Ministry the principles laid down for the Civil Service as a whole must be maintained.

two, three or four years with the Colours or four years with the Colours and eight with the reserve, six with the Colours and six with the reserve, or eight years with the Colours and four with the reserve.

Mdlle. Herveu Returns

FROM Paris comes word that Mdlle. Jane Herveu, who was one of the first ladies to secure a pilot's certificate, has received permission to resume flying—the first civilian, it is said, to be so honoured in France since the Armistice. She is at present practising on a Caudron at Issy-les-Moulineaux.

SIDE-WINDS

THE idea of aerial services between the North of England and Scandinavia, outlined by Mr. Stuart A. Hirst, chairman of the Blackburn Co., in *FLIGHT* for March 20, was further dealt with by Mr. Hirst at a dinner at the Savoy Hotel on Monday, at which he presided. He said that directly the bar to civilian flying was removed the North Sea Aerial Navigation Co. would begin to operate aircraft between Hull, Esbjerg, and Copenhagen, in Denmark, with three branch services—one north to Gothenburg and Christiania; another north-east and east to Stockholm, Helsingfors and Petrograd; and the third to Amsterdam and Rotterdam. The company were very interested in the design and construction of the vessels, and believed that in a flying boat of about 50 tons, which they had already under consideration, and which would afford accommodation for several tons of mail and merchandise, they had a sound business proposition. He enlarged upon the advantages to business men who would be able to attend to their correspondence in their own offices in a morning, get over to Bremen, Copenhagen, or even to Amsterdam, transact in an hour business that hitherto would have required a week to put through, and be back safely in their homes in England for dinner the same day.

WITH their usual enterprise, Messrs. Harrods have been exhibiting two distinct types of aircraft, one a Blackburn "side-car" monoplane, and the other a Norman Thompson flying-boat by Messrs. Handley Page, Ltd. The former, made by the Blackburn Aeroplane Co., has a span of 27 ft. 3 in. and is fitted with a 45 h.p. twin-cylinder "Gnat" A.B.C. engine; the price is given as £450. The Norman Thompson flying-boat is fitted with a 120 h.p. Beardmore motor.

WE hear that Mr. H. M. Hobson and Major T. P. Searight, of Messrs. H. M. Hobson, Ltd., are to visit America, sailing in the "Olympic" about the middle of April. They will stay at the Vanderbilt Hotel, New York.

MESSRS. ALEX. DUCKHAM AND CO., LTD., announce that their Sales Branch has been transferred to 4, Broad Street Place, E.C. 2, to which communications should be addressed in future.

MESSRS. J. SAGAR AND CO., LTD., of Halifax, who specialise in wood-working machinery, announce that they have opened an office at the Chamber of Commerce Buildings, New Street, Birmingham.

THE full title of the British Chuck and Piston Ring Co., Ltd., of Holbrook Lane, Coventry, was, it must be admitted a little long, and, doubtless, their friends will be relieved to hear that they have "chucked" a portion of it. In future, the style will be the British Piston Ring Co., Ltd. It should also be noted that their telegraphic address is now "Pistorings Coventry," instead of simply "Rings."

WHEN the City of London honours the nation's heroes, it wants the best gifts, and it is fitting that the five swords of honour for presentation, with the freedom of the City, to Admiral the Rt. Hon. Viscount Jellicoe of Scapa, G.C.B., O.M., G.C.V.O., Admiral Sir David Beatty, G.C.B., G.C.V.O., D.S.O., Field-Marshal the Rt. Hon. the Viscount French

of Ypres, K.P., G.C.B., O.M., G.C.V.O., K.C.M.G., Field-Marshal Sir Douglas Haig, K.T., G.C.B., G.C.V.O., K.C.I.E., General Sir Edmund H. H. Allenby, G.C.B., G.C.M.G., should be made by the Goldsmiths and Silversmiths Company, Ltd., 112, Regent Street, London, W. 1. Each sword will be 18 carat gold richly jewelled, and with ornamentation in enamel and relief work specially relating to the City of London and the War services of the various recipients.

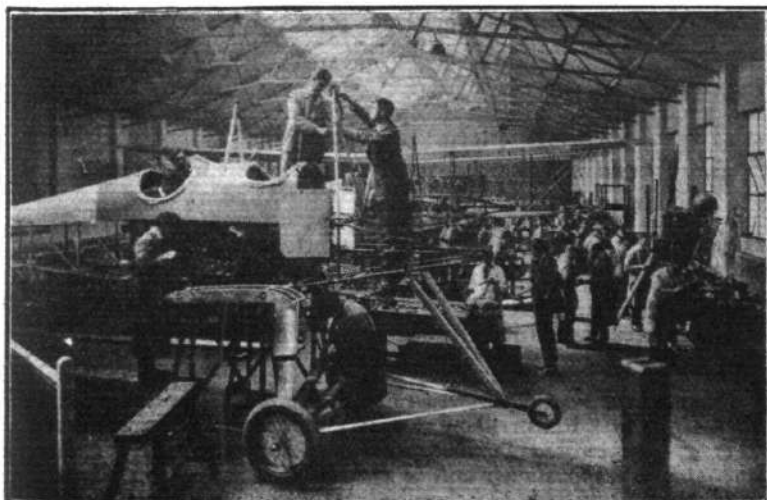
WITH a view to making the next edition of their Memo. Desk Calendar more interesting, the Sun Electrical Co. are awarding a series of prizes from £5 5s. down to 5s. for sets of twelve phrases suitable for use on the calendar leaves. Phrases should be written on one side of the paper only, and should consist of bright, cheerful sentences—"a thought for the day"—preferably not exceeding fifteen words. They may be either original or selected, and of a general character or applying specifically to the Sun Electrical Co.'s products. Competitors may send in more than one set, but not more than one prize will be awarded to any one individual. Entries must be sent in by May 3 to "Calendar" Publicity Dept., Sun Electrical Co., Ltd., 57-59, Neal Street, Long Acre, W.C. 2, from whom further details of the competition may be obtained.

IN connection with the attempt of Mr. Hawker and Capt. Grieve to make a non-stop flight across the Atlantic, we understand that the Rolls-Royce engine fitted to their Sopwith will be fitted with two Watford magnetos, each firing six cylinders.

ANOTHER important fitting is the carburettor, and it is not surprising that in the case of all the British entrants they will pin their faith to Claudel-Hobsons.

FROM the Hart Accumulator Co., Ltd., Marshgate Lane, Stratford, London, E. 15, comes a business-like calendar which will find a ready welcome in most offices. It is designed on the large scale, and the figures are certainly bold. The various types of Hart accumulators for motor work are illustrated in the calendar, and the firm will be pleased to forward one to any trade buyer who applies as above.

MANUFACTURES for the War on land, on the sea and under, and in the air have been occupying the attention of Messrs. Ruston and Hornsby, Ltd., of Lincoln, and it is not without interest to note that their record of complete aeroplanes is 2,750, while of aero engines and equivalent parts they turned out over 4,000. In the various departments of this great firm, well on to 4,000,000 separate items were produced varying in weight from a boiler of 37 tons down to fuse pellets of less than an ounce, and in complexity from a multi-cylinder submarine engine to the simplicity of a horse-shoe. A consideration of these figures may well make Lincoln proud of the company, their staff, and all those who have given of their best to the work. Some indication of the esteem in which this work has been held by the various Government Departments concerned may be gained by a perusal of letters received, complimenting the company upon their thoroughness and adaptability.



TWO ERECTING SHOPS IN THE AUSTIN WORKS.—On the left are shown a number of R.E.7 biplanes, while on the right is a large batch of S.E.5's.

RESETTLEMENT

Resettlement of R.A.F. Personnel

THERE are many officers and men of the R.A.F. who are demobilised or are about to be demobilised.

In order to assist those who are undecided or are seeking advice as to their prospects in civil life, the Editor has arranged for an expert, with wide experience of service, industrial and educational conditions, to give advice to those who may solicit it through the medium of this Journal.

Applications, which must be in writing, should be marked *Resettlement*, and addressed to the Editor, FLIGHT, 36, Great Queen Street, Kingsway, W.C. 2. They will be dealt with in these columns, as far as possible, in rotation.

S.M., EX-FLYING OFFICER.—With your engineering qualifications, you should have no difficulty in finding immediate employment, but as regards flying, you may have to wait. You should write to the leading aircraft companies with a view to becoming a test pilot.

E.D.A.—We have no information with regard to the formation and constitution of "Aerial Police." Consequently, we cannot advise you as to the necessary particulars for making an application.

A FLIGHT CADET.—See reply to E.J.W., Flight Cadet, in FLIGHT, April 3, 1919.

M.C., EX-N.C.O. PILOT.—You have done wisely in returning to your former post for the time being. You will probably find opportunities for resuming flying in the near future. In the meantime you should register your name and qualifications with the leading aircraft companies.

J.P., EX-SERGEANT RIGGER and A.E.T., RIGGER.—You will be best advised to remain in your present post. There are many highly-skilled riggers with considerable works' experience, as well as the majority of ex-Service riggers, who are compelled to return to their former occupations on account of the sudden drop in aircraft work. There is little prospect of obtaining employment in civilian aviation at present. There will, no doubt, be opportunities later on.

R.H.H., FLIGHT SERGEANT (Clerk).—We regret we cannot suggest any opening for you in commercial aviation. Your Service experience alone is not sufficient for the kind of post you suggest.

W.C.W., SERGEANT CLERK.—We agree your case is unfortunate. You should apply to the Ministry of Labour for employment as civilian clerk.

Aerial Insurance

Now that the question of insurance of machines, passengers, pilots, goods, etc., is so very much to the fore, we shall be pleased to receive enquiries from companies or individuals interested in the subject, with a view to arranging rates, etc., under Lloyd's policies. Enquiries should be addressed to F. King, Manager, Aerial Insurance Department, 36, Great Queen Street, Kingsway, W.C. 2, who is in a position to quote the lowest market rates.

COMPANY MATTERS

Sir W. G. Armstrong, Whitworth and Co., Ltd.

THE directors of Sir W. G. Armstrong, Whitworth and Co. have declared a dividend on the ordinary shares for the half-year ended December 31 last of 1s. 6d. per share, making 2s. 6d. per share for the year, free of income-tax up to 5s. in £1. The usual dividends on the first and second preference shares and the dividend on the third preference shares, in accordance with the terms of the prospectus, will also be paid.

Sunbeam Motor Car Co., Ltd.

THE directors of the Sunbeam Motor Car Co., Ltd., announce that the 250,000 bonus £1 ordinary shares were allotted on the 1st inst. An interim dividend of 2½ per cent., free of tax, on the ordinary shares, including the newly allotted bonus shares, is also announced, payable on April 15, when the half-year's preference dividend will also be paid.

NEW COMPANY REGISTERED

ADAMS BROS. AND BURNLEY, LTD., Donington House, Norfolk Street, W.C.—Capital £10,000, in £1 shares. Acquiring business carried on as Adams Bros. and Co., manufacturers of and dealers in aeroplanes, balloons, etc. First directors: W. T. Adams, R. G. Adams and A. C. Burnley.

PUBLICATIONS RECEIVED

The Revelations of Roy. (With Apologies to Armetas). London: The Aeroplane and General Publishing Co., Ltd., 61, Carey Street, W.C. 2. Price 1s. net.

Aeroplane Construction. By Sydney Camm. London: Crosby Lockwood and Son. Price 7s. 6d. net.

Aeronautical Patents Published

Abbreviations:—cyl. = cylinder; I.C. = internal combustion; m. = metres.

APPLIED FOR IN 1915

Published April 10, 1919

- 13,689. W. A. WILLIAMS and NORTH BRITISH RUBBER CO. Balloon fabrics, etc.
- 13,690. W. A. WILLIAMS and NORTH BRITISH RUBBER CO. Balloon fabrics, etc.
- 13,953. AERONAUTICAL INSTRUMENT CO. and G. BREWER. Hands or indicating fingers for instruments.
- 14,060. H. B. MOLESWORTH. Directing dropping of bombs, etc., from aircraft.
- 14,577. G. DE HAVILLAND and AIRCRAFT MANUFACTURING CO. Controlling aeroplanes.
- 14,695. H. O. SHORT. Explosion engines for aircraft.
- 15,123. CURTISS MOTOR CO. Flying-boats.
- 15,465. PETERS and CO. and F. C. HIBBERD. Aerial screw propellers, etc.
- 15,635. AVERY, LTD., and R. R. GIBBS. Instrument for ascertaining tensional stress in aeroplane stays, wires, etc.

APPLIED FOR IN 1917

The numbers in brackets are those under which the Specifications will be printed and abridged, etc.

Published April 10, 1919

- 18,714. W. L. CORRY. Method of causing rarefaction of the air and utilising same in aviation. (124,005.)

APPLIED FOR IN 1918

The numbers in brackets are those under which the Specifications will be printed and abridged, etc.

Published April 10, 1919

- 2,426. S. VALDES Y CORTES. Driving of flying-machines, boats, etc. (124,012.)
- 4,878. H. DARWIN. Aeronautical instruments. (123,996.)
- 4,974. J. RUSSELL and R. KENNEDY. I.C. turbine engine for aeroplanes, etc. (124,067.)
- 5,840. W. ROBERTSON. Inclometers for aircraft, etc. (124,081.)
- 6,933. AMERICAN RUBBER CO. Aeroplane structural elements. (124,093.)
- 11,191. W. H. ASTON. Tail jacks for aeroplanes. (124,133.)
- 19,602. SOC. DES MOTEURS Gnome et Rhone. Valve gear for radial I.C. engines. (124,166.)

Index and Title Page for Vol. X.

The 8-page Index for Vol. X of "FLIGHT" (January to December, 1918) is now ready, and can be obtained from the Publishers, 36, Great Queen Street, Kingsway, W.C. 2. Price 8d. per copy, post free.

If you require anything pertaining to aviation, study "FLIGHT'S" Buyers' Guide and Trade Directory, which appears in our advertisement pages each week (see pages li, lii, liii, and liv).

NOTICE TO ADVERTISERS

IN order that "FLIGHT" may continue to be published at the usual time, it is now necessary to close for Press earlier. All Advertisement Copy and Blocks must be delivered at the Offices of "FLIGHT," 36, Great Queen Street, Kingsway, W.C. 2, not later than 12 o'clock on Saturday in each week for the following week's issue.

FLIGHT

and The Aircraft Engineer,

36, GREAT QUEEN STREET, KINGSWAY, W.C. 2.

Telegraphic address: Truditur, Westcent, London.

Telephone: Gerrard 1828.

SUBSCRIPTION RATES

"FLIGHT" will be forwarded, post free, at the following rates:—

UNITED KINGDOM.			ABROAD.		
	s.	d.		s.	d.
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6 " " "	14	1	6 " " "	16	6
12 " " "	28	2	12 " " "	33	0

These rates are subject to any alteration found necessary under War conditions.

Cheques and Post Office Orders should be made payable to the Proprietors of "FLIGHT," 36, Great Queen Street, Kingsway, W.C. 2, and crossed London County and Westminster Bank, otherwise no responsibility will be accepted.

Should any difficulty be experienced in procuring "FLIGHT" from local newsvendors, intending readers can obtain each issue direct from the Publishing Office, by forwarding remittance as above.